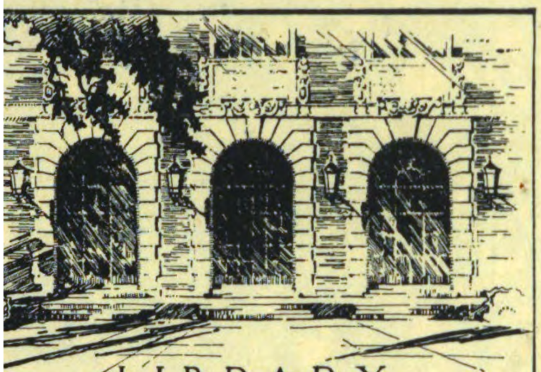

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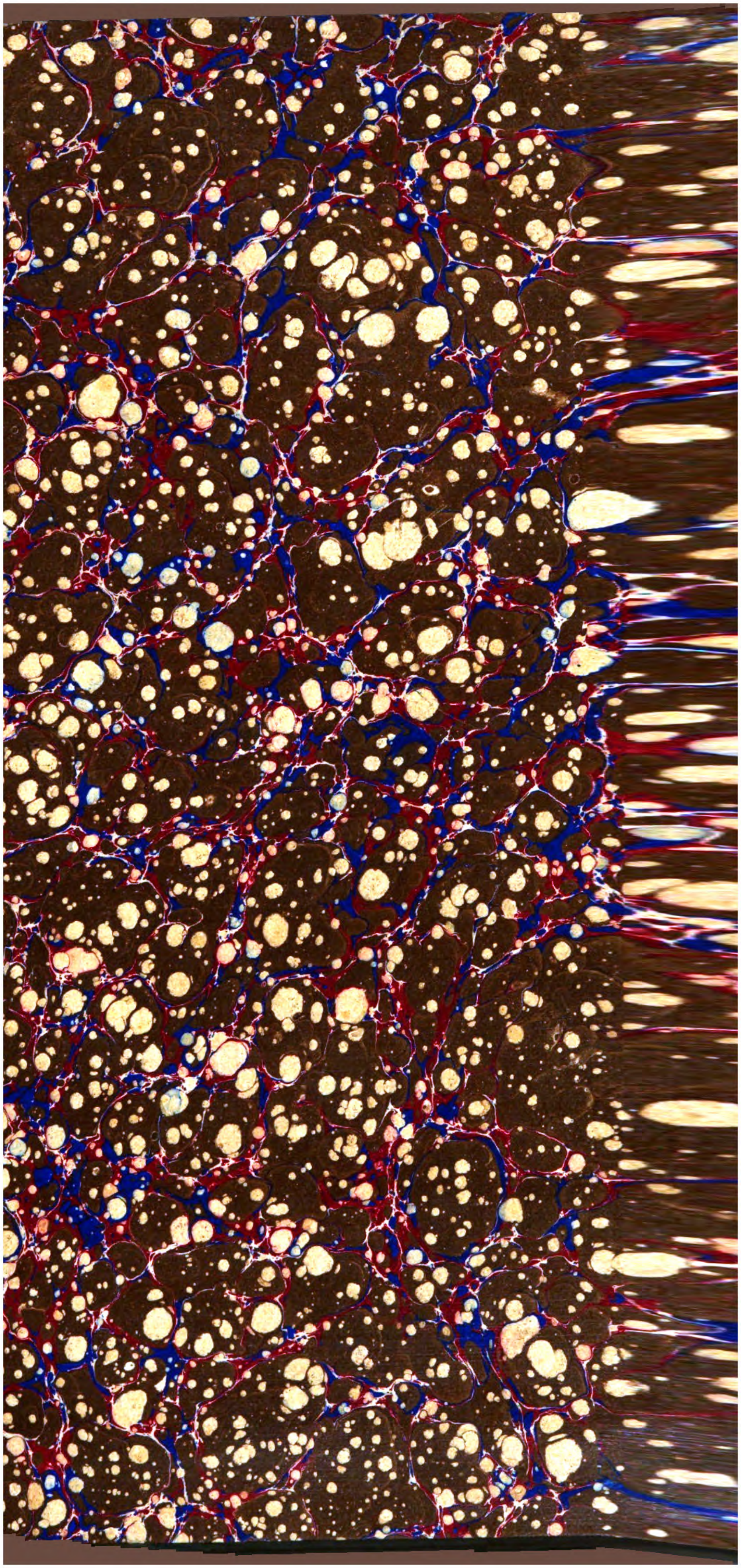

ALDEN'S

MANIFOLD CYCLOPEDIA

OF

KNOWLEDGE AND LANGUAGE.

WITH ILLUSTRATIONS

VOL. 11.

DEBT—DOMINIE.

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SCHEME OF SOUND SYMBOLS

FOR THE PRONUNCIATION OF WORDS.

Note.—(-) is the mark dividing words respelt phonetically into syllables; (′), the accent indicating on which syllable or syllables the accent or stress of the voice is to be placed.

Sound-symbols employed in Respelling.	Representing the Sounds as exemplified in the Words.	Words respelt with Sound-symbols and Marks for Pronunciation.
ā	mate, fate, fail, aye	*māt, fāt, fāl, ā.*
ă	mat, fat	*măt, făt.*
â	far, calm, father	*fâr, kâm, fâ'thėr.*
ä	care, fair	*cär, fär.*
aw	fall, laud, law	*fawl, lawd, law.*
ē	mete, meat, feet, free	*mēt, mēt, fēt, frē.*
ĕ	met, bed	*mĕt, bĕd.*
ė	her, stir, heard, cur	*hėr, stėr, hėrd, kėr.*
ī	pine, ply, height	*pīn, plī, hīt.*
ĭ	pin, nymph, ability	*pĭn, nĭmf, ă-bĭl'ĭ-tĭ.*
ō	note, toll, soul	*nōt, tōl, sōl.*
ŏ	not, plot	*nŏt, plŏt.*
ô	move, smooth	*môv, smôth.*
ö	Goethe (similar to *e* in her)	*gö'tėh.*
ow	noun, bough, cow	*nown, bow, kow.*
oy	boy, boil	*boy, boyl.*
ū	pure, dew, few	*pūr, dū, fū.*
ŭ	bud, come, tough	*bŭd, kŭm, tŭf.*
û	full, push, good	*fûl, pûsh, gûd.*
ü	French plume, Scotch guid	*plüm, güd.*
ch	chair, match	*chär, măch.*
ċh	German buch, Heidelberg, Scotch loch (guttural)	*bôċh, hī'dėl-bĕrċh, lŏċh.*
g	game, go, gun	*gām, gō, gŭn.*
j	judge, gem, gin	*jŭj, jĕm, jĭn.*
k	king, cat, cot, cut	*kĭng, kăt, kŏt, kŭt.*
s	sit, scene, cell, city, cypress	*sĭt, sēn, sĕl, sĭt'ĭ, sī'prĕs.*
sh	shun, ambition	*shŭn, ăm-bĭsh'ŭn.*
th	thing, breath	*thĭng, brĕth.*
th	though, breathe	*thō, brēth.*
z	zeal, maze, muse	*zēl, māz, mūz.*
zh	azure, vision	*ăzh'ėr, vĭzh'ŭn.*

ABBREVIATIONS USED IN THIS WORK.

a., *or* adj	adjective.
A. B	Bachelor of Arts.
abbr	abbreviation, abbreviated.
abl	ablative.
Abp	Archbishop.
abt	about.
Acad	Academy.
acc	accusative.
act	active.
A. D	in the year of our Lord.
ad. *or* adv	adverb.
aft	after.
Adjt	Adjutant.
Adm	Admiral.
Ag	Silver (Argentum).
agri	agriculture.
Al	Aluminium.
Ala	Alabama.
alg	algebra.
A. M	before noon.
A. M	Master of Arts.
Am	Amos.
Amer	America, American.
anat	anatomy, anatomical.
anc	ancient, anciently.
An. M	in the year of the world.
anon	anonymous.
antiq	antiquity, antiquities.
aor	aorist, aoristic.
Apr	April.
Ar	Arabic.
arch	architecture.
archæol	archæology.
arith	arithmetic.
Ark	Arkansas.
art	article.
artil	artillery.
AS. *or* A. Sax	Anglo-Saxon.
As	Arsenic.
Assoc	Association.
asst	assistant.
astrol	astrology.
astron	astronomy.
attor	attorney.
at. wt	atomic weight.
Au	Gold (Aurum).
A. U. C	in the year from the building of Rome.
Aug	August.
aug	augmentative.
Aust	Austrian.
A. V	authorized version (of Bible), 1611.
avoird	avoirdupois.
B	Boron.
B	Britannic.
b	born.
Ba	Barium.
Bart	Baronet.
Bav	Bavarian dialect.
bl., bbl	barrel, barrels.
B. C	before Christ.
B. C. L	Bachelor of Civil Law.
B. D	Bachelor of Divinity.
bef	before.
Belg	Belgic.
Bi	Bismuth.
biog	biography, biographical.
biol	biology.
B. L	Bachelor of Laws.
Bohem	Bohemian.
bot	botany, botanical.
Bp	Bishop.
Br	Bromine.
Braz	Brazilian.
Brig	Brigadier.
Brit	British, Britannica.
bro	brother.
Bulg	Bulgarian.
bush	bushel, bushels.
C	Carbon.
c	century.
c	city.
Ca	Calcium.
Cal	California.
Camb	Cambridge.
Can	Canada.
Cant	Canterbury.
cap	capital.
Capt	Captain.
Card	Cardinal.
carp	carpentry.
Catal	Catalonian.
Cath	Catholic.
caus	causative.
cav	cavalry.
Cd	Cadmium.
Ce	Cerium.
Celt	Celtic.
Chal	Chaldee.
chem	chemistry, chemical
chh	church.
Chin	Chinese.
Chron	Chronicles.
chron	chronology.
Cl	Chlorine.
Class	Classical (= Greek and Latin).
Co	Cobalt.
Co	Company.
co	county.
cog	cognate, cognate with.

ABBREVIATIONS.

Col	Colonel.
Col	Colossians.
Coll.	College.
colloq.	colloquial.
Colo.	Colorado.
Com	Commodore.
com	commerce.
comp.,	compare.
compar.	comparative.
conch.	conchology.
cong.	congress.
Congl.	Congregational.
conj.	conjunction.
Conn.	Connecticut.
contr.	contraction, contracted.
Cop.	Coptic.
Cor.	Corinthians.
corr.	corresponding.
Corn.	Cornish.
Cr.	Chromium.
crystal	crystallography.
Cs.	Cæsium.
ct	cent.
Cu	Copper (Cuprum).
cwt	a hundred weight.
Cyc.	Cyclopædia.
Cym	Cymric.
D.	Didymium.
D. *or* Dut.	Dutch.
d.	died.
d. (l. s. d.)	penny, pence.
Dak.	Dakota.
Dan.	Daniel.
Dan.	Danish.
dat.	dative.
dau.	daughter.
D. C	District of Columbia
D. C. L.	Doctor of Civil (or Common) Law.
D. D	Doctor of Divinity.
Dec.	December.
dec.	declension.
def	definite, definition.
deg.	degree, degrees.
Del.	Delaware.
Del.	Delegate, Delegates
Dem	Democratic.
Dep.	Deputy, Deputies.
dep	deponent.
dept.	department.
deriv.	derivation, derivative.
Deut.	Deuteronomy.
dial.	dialect, dialectic.
diam	diameter.
Dic.	Dictionary.
dim	diminutive.
dist	district.
distrib.	distributive.
div.	division.
doz.	dozen.
Dr.	Doctor.
dr.	dram, drams.
dram.	drama, dramatic.
dwt.	pennyweight.
dyn.	dynamics.
E.	Erbium.
e.	east, eastern.
E., Eng.	English.
Eccl.	Ecclesiastes.
eccles.	ecclesiastical.
ed.	edited, edition, editor.
e.g.	for example.
Egypt	Egyptian.
elect	electricity.
Emp.	Emperor.
Encyc	Encyclopædia.
engin	engineering.
engr.	engraving.
entom	entomology.
env. ext.	envoy extraordinary.
ep	epistle.
Eph	Ephesians.
Epis	Episcopal.
eq	equal, equals.
equiv	equivalent.
Est.	Esther.
estab	established.
etc.	and others like.
Eth.	Ethiopic.
ethn	ethnography, ethnology.
et seq.	and the following.
etym	etymology.
Eur	European.
Ex	Exodus.
exclam	exclamation.
Ezek	Ezekiel.
Ezr	Ezra.
F	Fluorine.
f	father.
Fahr	Fahrenheit.
Fe	Iron (Ferrum).
Feb	February.
fem	feminine.
fig	figure, figuratively.
Finn	Finnish.
Fl	Flemish.
Fla	Florida.
for	foreign.
fort	fortification.
Fr	French.
fr.	from.
freq	frequentative.
Fris	Frisian.
ft	foot, feet.
fut	future.
G	Glucinium.
Ga	Gallium.
Gael	Gaelic.
Gal	Galatians.
gal	gallon.
galv	galvanism, galvanic.
Gen	General.
Gen	Genesis.
gen. *or* genit.	genitive.
Geo	Georgia.
geog	geography.
geol	geology.
geom	geometry.
Ger	German.
Goth	Gothic.
Gov	Governor.
govt	government.
Gr	Grand.
Gr	Greek.
gr	grain, grains.
gram	grammar.
H	Hydrogen.
h	hour, hours.
Hab.	Habakkuk.
Hag	Haggai.
H. B. M.	His (or Her) Britannic Majesty.

ABBREVIATIONS.

Heb	Hebrew, Hebrews.
her	heraldry.
Hg	Mercury, Hydrargyrum.
hhd	hogshead, hogsheads.
Hind	Hindostanee, Hindu, or Hindi.
hist	history, historical.
Hon	Honorable.
hort	horticulture.
Hos	Hosea.
Hung	Hungarian.
hydros	hydrostatics.
I	Iodine.
I., Is	Island, Islands.
i., *or* intran	intransitive.
Icel	Icelandic.
ich	ichthyology.
Ida	Idaho.
i.e	that is.
Ill	Illinois.
illus	illustration.
Imp	Imperial.
imper	imperative.
imperf	imperfect.
impers	impersonal.
In	Indium.
in	inch, inches.
incept	inceptive.
Ind	Indiana.
ind	indicative.
indef	indefinite.
Indo-Eur	Indo-European.
inf	infantry.
inf	infinitive.
int	interest.
intens	intensive.
interj	interjection.
introd	introduction.
Io	Iowa.
Ir	Iridium.
Ir	Irish.
Iran	Iranian.
irr	irregular.
Is	Isaiah.
It	Italian.
Jan	January.
Jas	James.
Jer	Jeremiah.
Jn	John.
Josh	Joshua.
Jr	Junior.
Judg	Judges.
Jul	July.
K	Potassium (Kalium)
K	Kings (in Bible).
k	king.
Kan	Kansas.
Kt	Knight.
Ky	Kentucky.
L	Latin.
L	Lithium.
l. (l. s. d.)	pound, pounds (sterling).
La	Lanthanium.
La	Louisiana.
Lam	Lamentations.
lang	language.
lat	latitude.
lb., llb	pound, pounds (weight).
Lett	Lettish.
Lev	Leviticus.
L. G	Low German.
Lieut	Lieutenant.
Linn	Linnæus, Linnæan.
lit	literal, literally
Lith	Lithuanian.
L. L	Late Latin, Low Latin.
LL.D	Doctor of Laws.
lon	longitude.
M	Monsieur.
m	mile, miles.
M. A	Master of Arts.
Macc	Maccabees.
mach	machinery.
Mag	Magazine.
Maj	Major.
Mal	Malachi.
manuf	manufactures.
Mar	March.
masc	masculine.
Mass	Massachusetts.
math	mathematics, mathematical.
Matt	Matthew.
M. D	Doctor of Medicine.
Md	Maryland.
Me	Maine.
mech	mechanics, mechanical.
med	medicine, medical.
Med. L	Mediæval Latin.
mem	member.
mensur	mensuration.
Messrs. *or* MM	Gentlemen, Sirs.
metal	metallurgy.
metaph	metaphysics, metaphysical.
meteor	meteorology.
Meth	Methodist.
Mex	Mexican.
Mg	Magnesium.
M. H. G	Middle High German.
Mic	Micah.
Mich	Michigan.
mid	middle (voice).
milit	military.
min	minute, minutes.
mineral	mineralogy.
Minn	Minnesota.
Min. Plen	Minister Plenipotentiary.
Miss	Mississippi.
Mlle	Mademoiselle.
Mme	Madam.
Mn	Manganese.
Mo	Missouri.
Mo	Molybdenum.
mod	modern.
Mont	Montana.
Mr	Master (Mister).
Mrs	Mistress (Missis).
MS., MSS	Manuscript, Manuscripts.
Mt	Mount, mountain.
mus	music.
Mus. Doc	Doctor of Music.
myth	mythology, mythological.
N	Nitrogen.
N	Norse, Norwegian.
n	north, northern, northward.

ABBREVIATIONS.

n	noun.
Na	Sodium (Natrium).
Nah	Nahum.
nat	natural.
naut	nautical.
navig	navigation.
Nb	Niobium.
N. Car	North Carolina.
Neb	Nebraska.
neg	negative.
Neh	Nehemiah.
neut	neuter.
Nev	Nevada.
N. Ham	New Hampshire.
N. H. G.	New High German.
Ni	Nickel.
N. Jer	New Jersey.
N. Mex	New Mexico.
N. T., *or* N. Test	New Testament.
N. Y.	New York.
nom	nominative.
Norm	Norman.
North. E.	Northern English.
Nov	November.
Num	Numbers.
numis	numismatics.
O	Ohio.
O	Oxygen.
Obad	Obadiah.
obj	objective.
obs., *or* †	obsolete.
obsoles	obsolescent.
O. Bulg	Old Bulgarian.
Oct	October.
OE	Old English.
OF. *or* O. Fr.	Old French.
O. H. G	Old High German.
Ont	Ontario.
O. Prus	Old Prussian.
Or	Oregon.
ord	ordnance.
orig	original.
ornith	ornithology.
Os	Osmium.
O. Sax	Old Saxon.
O. T., *or* O. Test	Old Testament.
Oxf	Oxford.
oz	ounce, ounces.
P	Phosphorus.
p., pp	page, pages.
p., *or* part	participle.
paleon	paleontology.
parl	parliament.
pass	passive.
pathol	pathology.
Pb	Lead (Plumbum).
Pd	Palladium.
pejor	pejorative.
Penn	Pennsylvania.
Per	Persic or Persian.
perf	perfect.
pers	person.
persp	perspective.
Peruv	Peruvian.
Pet	Peter.
Pg	Portuguese.
phar	pharmacy.
Ph.D	Doctor of Philosophy.
Phil	Philippians.
Philem	Philemon.
philol	philology, philological.
philos	philosophy, philosophical.
Phen	Phœnician.
photog	photography.
phren	phrenology.
phys	physical, physiology
physiol	physiology, physiological.
Pl.	Plate.
pl.	plural.
Pl. D	Platt Deutsch.
plupf	pluperfect.
P. M.	after noon.
pneum	pneumatics.
P. O.	Post Office.
poet	poetical.
Pol	Polish.
pol. econ	political economy.
pop.	population.
poss	possessive.
pp	pages.
pp	past participle.
p. pr	present participle.
Pr.	Provençal.
prep	preposition.
Presb	Presbyterian.
Pres	President.
pres	present.
pret	preterite.
prim	primitive.
priv	privative.
prob	probably.
Prof	Professor.
pro	pronoun.
pron	pronunciation, pronounced.
pros.	prosody.
Prov	Proverbs.
prov	province, or provincial.
Ps	Psalm, Psalms.
psychol	psychology.
pt.	pint.
Pt	Platinum.
pub	published, publisher.
pwt	pennyweight.
Q	Quebec .
qt.	quart.
qtr.	quarter (28 lbs.).
qu	query.
R	Rhodium.
r., *or* riv	river.
Rb	Rubidium
q.v.	which see.
Rom. Cath.	Roman Catholic.
rec. sec	recording secretary
Ref	Reformed.
refl	reflex.
reg	regular.
rel. pro	relative pronoun.
rep	representation.
Rev	Revelation.
Rev	Reverend.
Rev. V	Revised Version.
rhet	rhetoric, rhetorical.
R. I.	Rhode Island.
Rom	Roman, Romans.
r.r.	railroad.
Rt	Right.
Ru	Ruthenium.
Rus	Russian.

ABBREVIATIONS.

r.w.	railway.
S	Sulphur.
s.	second, seconds.
s.	shilling, shillings.
S. *or* s.	south, southern, southward.
Sam.	Samuel.
Sax.	Saxon.
Sb.	Antimony (Stibium).
Sc	Scotch.
Scand.	Scandinavian.
S. Car.	South Carolina.
scr	scruple, scruples.
Scrip.	Scripture, Scriptural.
sculp.	sculpture.
Se	Selenium.
sec	secretary.
sec	section.
Sem.	Semitic.
Sep.	September.
Serv.	Servian.
Si.	Silicon.
sing.	singular.
sis.	sister.
Skr.	Sanskrit.
Slav.	Slavonic, Slavic.
Sn	Tin (Stannum).
Soc.	Society.
Song Sol.	Song of Solomon.
Sp	Spanish.
sp. gr.	specific gravity.
sq.	square.
Sr.	Senior.
Sr.	Strontium.
St.	Saint.
st.	street.
stat.	statute.
S. T. D.	Doctor of Sacred Theology.
subj.	subjunctive.
suf.	suffix.
superl.	superlative.
Supp.	Supplement.
Supt.	Superintendent.
surg.	surgery, surgical.
Surv.	surveying.
Sw.	Swedish.
sym.	symbol.
syn.	synonym.
Syr.	Syriac.
t.	town.
tr.	transitive.
Ta	Tantalum.
Tart.	Tartar.
Te.	Tellurium.
technol.	technology.
teleg.	telegraphy.
Tenn.	Tennessee.
terr.	territory.
term.	termination.
Teut.	Teutonic.
Tex.	Texas.
Th.	Thorium.
theol.	theology, theological.
Thess.	Thessalonians.
Ti.	Titanium.
Tim.	Timothy.
Tit.	Titus.
Tl.	Thallium.
toxicol.	toxicology.
trigon.	trigonometry.
Turk.	Turkish.
typog.	typography, typographical.
U.	Uranium.
Unit.	Unitarian.
Univ.	Universalist.
Univ.	University.
U. Presb.	United Presbyterian.
U. S.	United States.
Ut.	Utah.
V.	Vanadium.
v.	verb.
Va.	Virginia.
var.	variety (of species).
Vt.	Vermont.
v. i.	verb intransitive.
vill.	village.
viz.	namely.
v. n.	verb neuter.
voc.	vocative.
vol.	volume.
vols.	volunteers.
v. tr.	verb transitive.
W.	Tungsten (Wolfram).
W.	Welsh.
w.	west, western, westward.
Wash.	Washington.
Wis.	Wisconsin.
wt.	weight.
W. Va.	West Virginia.
Wyo.	Wyoming.
Y.	Yttrium.
yd.	yard.
yr.	year.
Zech.	Zechariah.
Zeph.	Zephaniah.
Zn.	Zinc.
zool.	zoology, zoological.
Zr.	Zirconium.

ALDEN'S

MANIFOLD CYCLOPEDIA.

DEBT, n. *dĕt* [OF. *dette* and *debte*—from mid. L. *debĭtă*, a sum due; *debĭtus*, owed (see DEBIT)]: anything due from one person to another; what one is bound or obliged to pay; obligation; liability; in *Scrip.*, sin; trespass. DEBT OF NATURE, death or dissolution, as what is due to universal and inexorable law. DEBTOR, n. *dĕt'ėr* [OF. *deteur*—from L. *debĭtōrem*, a debtor]: the person who owes another money, goods, or services; the side of an account in which debts are marked. DEBTED, pp. v. *dĕt'ĕd*, OE. for indebted.

DEBT: that which one person owes to another, or the duty which, as responsible beings, all owe toward God. Life is figuratively spoken of as a loan, and the act of dying is called 'paying the debt of Nature.' Usually, the term is limited to money legally due, and exigible by process of law. To speak in legal phraseology, D. may originate either in agreement or by operation of law, or as a consequence of injury, though in the latter case it generally assumes the form of a claim for Damages (q.v.). Liquidated D. (in Scotland, liquid), is where the exact amount has been ascertained; contingent D., is where the liability depends on the occurrence of an event which may or may not happen; future D. is where the liability is existing, but the time for payment has not yet arrived. This may, under some legal systems, like the Scotch, be secured by Arrestment or Inhibition where the debtor's solvency is doubtful; but under other systems there is, in general, no method of affixing a liability upon property in expectation of insolvency before the D. becomes payable, except in the case of bankruptcy, when a future or contingent D. may be proved against the estate. A debt may be secured on the debtor's real estate, as by mortgage or equitable lien; but these mortgagas are regarded as personal estate. A debt of record is one proved to exist by the records of a court. The most important are judgment debts, which have not only certain facilities in execution and attachment, but must be paid in full out of the personal estate before any debts due on contract. Specialty debts are debts by contract created by a deed or an instrument under seal. Other classifications of D. are: *doubtful*, whose payment is uncertain; *hypothecate*, constituting a lien on an estate; *active*, due to an individual;

liquid, due immediately without conditions; *privileged*, entitled to payment before others in case of the debtor's insolvency; e.g., debts to the govt., or for funeral expenses. It is necessary to a legal debt that a specific amount be due without reference to any future valuation to settle it.

DEBT, ACTION OF: procedure in law to recover what is owed; also to collect a penalty imposed by a statute; now technically existing in but few states, as recent laws provide a single civil action. A debt may be established by a document of record, a contract under seal, or a simple contract. An essential consideration is that a fixed and specific sum is owing and that no future valuation is required to settle it. In practice an action of debt is taken when the sum due is certain or is ascertained in such a manner as to be readily reduced to certainty, irrespective of how the obligation was incurred or is substantiated. It differs from *assumpsit* where action is taken on a certain or an uncertain sum, and from *covenant*, where it is taken only upon contracts substantiated according to prescribed rules. When the action is founded on a record, the declaration need not aver a consideration; when on a specialty, the declaration must contain the specialty; and when on a single contract, the consideration must be averred in the declaration, and the liability or agreement, though not necessarily an express promise to pay, must be stated. In pleading a defendant may deny the execution of the instrument or the existence of the record on which the action is taken; and a judgment may constitute a new debt on which another action of debt may be taken.

DEBT, IMPRISONMENT FOR: an ancient legal procedure; which, except in certain specified cases, was abolished in England 1869, in Scotland 1880, and has been gradually removed from the laws in the United States. In England the most important cases in which it is retained are those of defaulting trustees, of judgment debtors able but refusing to pay, and of absconding debtors. In the United States the law, as to the few special cases in which imprissonment for debt is allowed, differs in different states: usually in all such cases there is involved the element of fraud, or of violation of some official trust.

DEBT, NATIONAL: amount which any state admits itself to owe to those who may have advanced money for the use of the government, and on its credit or promise to pay. As in the case of individual debtors who sometimes engage to pay more than they obtain from the lender, the amount of a national debt may not be the amount which the nation has borrowed; it is often greater, from the necessity of holding out to capitalists, as an inducement to make a large advance, that they will be set down as creditors for more than they have given. On the other hand, though rarely on a large scale, when money is bearing low interest, a nation may give its creditors the alternative of receiving payment, or allowing a deduction from the nominal amount of their debt, and they may prefer the latter alternative. The national debt of Great Britain until recently was the heaviest in the world. It amounts, in round numbers, to £763,000,000 (abt. $3,700,000,000). It is now exceeded by that of France. That country having been entirely bankrupt during the first Revolution (see ASSIGNAT), its existing debt may be said to date no further back than the Consulate, when credit was restored. On the first return of the Bourbons, before the battle of Waterloo, it amounted to £123,000,000 (abt. $596,000,000); it had increased before the Franco German war to £460,000,000 (abt. $2,230,000,000); and between 1870–76 it mounted up to £936,000,000 (abt. $4,530,000,000. At the end of the period, 1870-80, it had fallen to £794,000,000 (abt. $3,850,000,000). The debt of the kingdom of Italy is very large in proportion to its resources, amounting to £390,000,000 (abt. $1,890,000,000) at the end of 1878. That of the Austrian empire, exclusive of the special debt of Hungary, amounted, 1881, July 1, to £316,000,000 (abt. $1,534,000,000). The separate debt of Hungary amounted to £43,000,000 (abt. $209,000,000). Spain, the most heavily indebted country in Europe, in proportion to its resources, had in 1881 a debt of about £510,000,000 (abt. $2,470,000,000) an increase of £91,000,000 since 1875. Turkey is believed to have a debt of about £260,000,000 (abt. $1,260,000,000), of which £184,000.000 consist of foreign loans. The debt of Russia is estimated at £425,000,000 (abt. $2,060,000,000). Holland had not long since a debt of £100,000,000 (abt. $485,000,000); it has been reduced from year to year, and now amounts to £79,000,000. The Belgian debt is £61,000,000 (abt. $296,000,000). The debt of Prussia in 1880 was close on £100,000,000 (abt $485,000,000), that of the annexed states, which it was arranged, on the enlargement of Prussia, should bear only the burden of the obligations incurred on their behalf, £7,000,000 (abt. $34,000,000). At the end of 1871, the German empire had a debt of £35,000,000 (abt. $170,000,000), incurred for extraordinary expenditure on the army and navy, but in 1881 the total debt was over £83,000,000 (abt. $400,000,000).

The national debt of the United Kingdom has arisen with the supremacy of parliament and the necessity for a standing army. Through the reigns of the Tudors and the Stuarts, the nation's protection against the power of the crown was the absence of a standing army, whose existence was regarded with great jealousy by the commons. But when the control of parliament over the prerogative was strengthened, jealousy in this direction was no longer necessary. Accordingly, it was when parliament triumphed in the Revolution settlement that the national debt began. The first regular loan was obtained 1693; it consisted of the capital of the newly created Bank of England, amounting to £1,200,000. This accommodation to the government was, in fact, the price paid by the bank for its privileges. As the nation was engaged in an expensive war, this beginning was rapidly followed up, and at the peace of Ryswick, 1697, the national debt exceeded £20,000,000. Before the accession of the House of Hanover in 1714, it had exceeded £50,000,000, and the rapid rise of this burden was a strong argument in the hands of the Jacobites against the Revolution settlement. Whenever a loan was negotiated by the government, special terms were offered according to circumstances. In one case, there might be a terminable annuity, say of 60 or 100 years—that is to say, a certain percentage being paid during that period, at the end the debt was to be extinguished by such payments: see ANNUITY. In other instances, there was a perpetual annuity. In a loan negotiated on the latter terms, that annuity was always rather under than above what a borrower would give to a private lender, although such a borrower was bound to repay the money, while the nation was not. It came to pass, in fact, through one of the most curious processes in the whole mystery of finance, that a loan never to be repaid was considered a more eligible investment than a loan to be repaid. The government made this gain—for a distinct gain it was—by the convenience to the public, who, always having money for which they were glad to get the secure interest of the funds, were always ready with a new lender when the old one wanted to be paid. Hence has come the perpetual shifting of the fundholders. And as long as there are moneyed persons who will buy thus into the stocks without any considerable reduction, there is a sure test that the debt is not beyond the capacity of the nation. Raised, however, as we have seen by special loans, each on its own conditions, the different funds became exceedingly varied and complicated. It was one of the projects of the great South Sea schemers of 1720, to conjoin them all into one uniform fund, but this plan was interrupted by the failure of the whole affair. Afterward, 1751, a general uniform arrangement was carried out, and the stocks were then called the Consolidated Fund: see CONSOLS. Meanwhile, the progress of the national debt was in round numbers as follows: In 1756, when the war of the Austrian succession began, it was £75,000,000; seven years afterward, when this war ended, it was £140,000,000. Increased by the American war and the war with France and Spain, memorable by the defence of Gibraltar, it had increased to the amount of £260,000,000 when, 1793, the great European war of the French Revolution broke out. At the peace of Amiens, 1803, the debt was £620,000,000. When the treaty of Vienna was resumed, after the battle of Waterloo, the amount had risen to £885,000,000. It has since decreased, although some further loans have been incurred. The largest of these is connected with one of the most honorable actions of which the British Empire, with all its traditions of glory, can boast—the advance of £20,000,000, 1834, for the emancipation of the colonial slaves. The latest considerable addition made to the national debt was during the Russian war of 1854, when £16,000,000 were raised by loan. In 1857, the amount of the D. was close to £812,000,000, but steadily decreased till 1878, when the unfunded debt became nearly as large as in 1858. In 1881, the total debt, including terminable annuities, was £763,045,940. In 1881 the 'funded debt' was £709,078,526; unfunded (exclusive of annuities) £22,077,500. The distinction between funded and unfunded is, that the government do not profess to repay the former—they give the creditor only an annuity, terminable or perpetual, and if he wants payment of his money, he can get it only by selling his right to this annuity; the other consists of temporary loans, liable to fluctuation, and renewed from time to time.

It must be kept in view, however, that from a peculiarity of phraseology, the enormous amount of the British national debt is partly fictitious, the whole sum neither having been borrowed nor being virtually due. When capitalists have advanced money, they have been content with a small percentage—3 or 3½—but they have often insisted that for each £100 advanced by them, they should have more than £100 of actual stock. If the condition of the market were such that the capitalist wanted 4½ per cent., and the interest or annuity obtained by him was only 3 per cent., he would insist on having stock to the extent of £150 for his £100. If 5 per cent. interest were paid on the nominal amount of the national debt, it would be a charge of more than £40,000,000 a year—the actual burden is between £26,000,000 and £27,000,000. Such is, however, the reliance on the national credit, and the convenience of having the stocks for investment, that the stockholders are content with little more than 3 per cent. interest, the right to an annuity of £3 being actually to be procured for somewhere about £90.

The literature of the country has teemed with projects for riddance of the incumbrance of the national debt, many of which go far wide of the mark, from the supposition that the debt is the incumbrance. In fact, the incumbrance is in the expenditure—the sacrifice of the nation's capital which has caused the debt—the debt itself is merely the shape in which that loss presses, and it must press in some shape. The millions have been exploded in powder and shot, and in other extravagances, and can never be recalled; all that we can do is, by industry and frugality, to make new millions, and replace the loss. Hence it is the supremest folly to suppose that the nation would profit by abolishing or wiping off the national debt—by repudiation, as it is called. Such an event would only be ruin to a large number of people who are in the position of being the nation's creditors, and would perhaps bring ill-gotten gain to a small number. It would be difficult to estimate precisely how such a calamity would act. In the first place, if it were seen to be in prospect, the funds would go rapidly down by the holders selling out, so that as long as the chances of stability would induce any one to buy at a very reduced price, the circle of sufferers would be, as it were, widening. The poorest of those interested would be the chief sufferers in the awful scramble. The working-classes, besides any savings which they might have directly invested in the funds, would lose about £40,000,000, which they have invested through savings' banks and friendly societies. Widows and unmarried women with narrow fixed incomes would be the next sufferers. It is unnecessary to go further; for the general paralysis of capital and stoppage of manufacturing industry, with loss of national reputation, would be incalculably disastrous. There is no way of reducing the national debt, except by saving up through taxation from the expenditure of the country. The process of reduction in this form is, however, always met by the consideration, whether the repeal of a disadvantageous tax, or the reduction of the interest of the D., is the better alternative. One thing is very clear, that from the progress of general wealth and increase of population, the national debt, assuming it to remain at its present amount, is always pressing with less and less severity on the country, and is therefore becoming more and more manageable. Some persons, looking at only one side of the matter, have gone the length of saying that, as a ready and safe means of investment, the national D. is a kind of blessing; though consideration shows that it can never be advantageous for the community at large to be taxed to pay interest to a limited number of individuals. Whatever be the incidence of taxation to pay the interest, now amounting in the aggregate to about £27,000,000 per annum, it is the proud boast of England that she has ever kept faith with the national creditors—never repudiated a farthing of her debt. As a natural consequence, the British funds are sought as a secure means of investment by people of capital in all lands. See Wilson's *National Budget and National Debt* (1882); see also the article FUND.

The following is a condensed statement of the public debt of the United States from official sources, 1888, July 1:

INTEREST-BEARING DEBT.

Bonds at 4½ per cent	$222,207,050.00
Bonds at 4 per cent	714,177,400.00
Refunding certificates at 4 per cent	138,050.00
Navy-Pension fund at 3 per cent	14,000,000.00
Pacific railroad bonds at 6 per cent	64,623,512.00
Principal	$1,015,146,012.00
Interest	11,624,205.99
Total	$1,026,770,217.99

DEBT ON WHICH INTEREST HAS CEASED SINCE MATURITY.

Principal	$2,496,095.26
Interest	168,267.86
Total	$2,664,363.12

DEBT BEARING NO INTEREST.

Old demand notes	$56,807.50
Legal tender notes	346,681,016.00
Certificates of deposit	14,415,000.00
Gold certificates	119,887,370.00
Silver certificates	200,387,376.00
Fractional currency, less $8,375,934.00 estimated as lost or destroyed	6,922,643.82
Principal	**$688,350,213.32**

DEBT.

TOTAL DEBT.

Principal		$1,705,992,320.58
Interest		11,792,473.14
Total		$1,717,784,793.72
Less cash items available for reduction of the debt	$348,979,672.37	
Less reserve held for redemption of U. S. notes	100,000,000.00	$448,979,672.37
Total debt, less available cash items		$1,268,805,121.35
Net cash in the Treasury		103,220,464.71
Debt, less cash in the Treasury, 1888, July 1		$1,165,584,656.64

CASH IN THE TREASURY.

Available for the reduction of the public debt:		
Gold held for gold certificates		$119,887,370.00
Silver held for silver certificates		200,387,376.00
U. S notes held for certificates of deposits actually outstanding		14,415,000.00
Cash held for matured debt and interest unpaid		14,288,568.40
Fractional currency		1,357.97
Total		$348,979,672.37
Reserve fund for redemption of U. S. notes		100,000,000.00
Unavailable for reduction of the debt; fractional silver coin	$26,051,741.19	
Minor coin	112,035.58	26,163,776.77
Legal-tender, gold, and silver certificates held as cash		51,490,176.00
Net cash balance on hand		103,220,464.71
Total cash in the Treasury		$629,854,089.85

BONDS ISSUED TO THE PACIFIC RAILWAY COMPANIES.

Total amount outstanding, 1888, July 1	$64,623,512
Interest paid by the U. S.	76,670,441
Interest repaid by transportation	21,501,487
Interest repaid in cash, 5 per cent. of net earnings	1,103,619
Amount paid into sinking fund by companies	9,630,942
Balance of interest paid by the U. S.	54,065,334

The following statement shows the outstanding principal of the public debt of the United States on Jan. 1 of each year 1791–1842, and on July 1 of each year 1843–88 inclusive, as reported by the sec. of the treasury:

1791	$75,463,476.52	1809	$57,023,192.09
1792	77,227,924.66	1810	53,173,217.52
1793	80,352,634.04	1811	48,005,587.76
1794	78,427,404.77	1812	45,209,737.90
1795	80,747,587.39	1813	55,962,827.57
1796	83 762,172.07	1814	81,487,846.24
1797	82,064,479.33	1815	99,833,660.15
1798	79,228,529 12	1816	127,334,933.74
1799	78,408,669.77	1817	123,491,965.16
1800	82,976,294.35	1818	103,466,633.83
1801	83,038,050.80	1819	95,529,648.28
1802	86,712,632.25	1820	91,015,566.15
1803	77,054,686.30	1821	89,987,427.66
1804	86,427,120.88	1822	93,546,676.98
1805	82,312,150.50	1823	90,875,877.28
1806	75,723,270.66	1824	90,268,777.77
1807	69,218,398.64	1825	83,788,432.71
1808	65,196,317.97	1826	81,054,059.99

DEBTOR.

1827	$73,987,357.20	1858	$44,911,881.03
1828	67,475,043.87	1859	58 496,837.88
1829	58,421.413.67	1860	64,842,287.88
1830	48,565,406.50	1861	90,580,873.72
1831	39,123,191.68	1862	524,176,412.13
1832	24,322,235.18	1863	1,119,772,138.63
1833	7,001,698.83	1864	1,815.784.370.57
1834	4,760,082.08	1865	2,680,647,869.74
1835	37,513.05	1866	2,773.236,173.69
1836	336,957.83	1867	2,678,126,103.87
1837	3,308,124.07	1868	2,611,687,851.19
1838	10,434,221.14	1869	2,588,452,213.94
1839	3,573,343.82	1870	2,480.672,427.81
1840	5,250,875.54	1871	2,353,211,332.32
1841	13,594,480.73	1872	2,253,251,328.78
1842	20,601,226.28	1873	2,234,482,993.20
1843	32,742,922.00	1874	2,251,690,468.43
1844	23,461,652.50	1875	2.232,284,531.95
1845	15,925,303.01	1876	2.180,395,067.15
1846	15.550,202.97	1877	2,205,301,392.10
1847	38,826,534.77	1878	2,256,205,892.53
1848	47,044,862.23	1879	2,349,567,232.04
1849	63,061.858.69	1880	2,128,791,054.63
1850	63,452,773.55	1881	2.077,389,253.58
1851	68,304,796.02	1882	1,926,688,678.03
1852	66,199,341.71	1883	1,892.547,412.07
1853	59,803.117.70	1884	1,838.904,607.57
1854	42,242,222.42	1885	1,872,340,557.14
1855	35,586,858.56	1886	1,783.438,697.78
1856	31,972,537.90	1887	1.700,771,948.68
1857	28,699,831.85	1888	1,705,992.320.58

DEBTOR, ABSCONDING: one who by personal departure endeavors to avoid payment of a debt. For the method of dealing with his offense under Scotch law, see MEDITATIO FUGÆ. In England, where the plaintiff in any action in a superior court of law proves, at any time before final judgment, by evidence on oath, to the satisfaction of a judge of one of those courts, that the plaintiff has good cause of action against the defendant to the amount of £50 or upward, and that there is probable cause for believing that the defendant is about to quit England unless he be apprehended, and that the absence of the defendant from England will materially prejudice the plaintiff in the prosecution of his action, such judge may, in the prescribed manner, order such defendant to be arrested and imprisoned for a period not exceeding six months, unless and until he has sooner given the prescribed security, not exceeding the amount claimed in the action, that he will not go out of England without the leave of the court. But if the action is for a sum in the nature of a penalty, it shall not be necessary to prove that the absence of the defendant from England will prejudice the plaintiff, and the security given is different.

In the United States, every state has statutes dealing with this offense. Something of concealment is requisite to the offense; an open change of residence is not considered in law as absconding, nor is a merely transient absence from the state: see DEBT, IMPRISONMENT FOR.

DEBTOR AND CREDITOR, Laws of: a department of jurisprudence. In the history of this, as of almost every other branch of jurisprudence, we may trace the general social progress. In the earlier stages of life in the state, the arrangements for borrowing and lending are rarely such as to enable the citizens to avail themselves with security of their mutual resources, or to assign such limits to the powers of the creditor as either the claims of humanity or his own true interests demand. On the one hand, lending is confounded with alms-giving; and the exaction of interest, and even of capital, is regarded as an act of inhumanity toward the poor. On the other hand, no sooner do the creditor's rights come to be recognized in anything like a legal sense, than there seem to be no logical grounds on which any limits can be set to them. If he is entitled to exact the debt at all, he is entitled to seize the goods of the debtor; and if the debtor has no goods, he is entitled to his services. But the possession of his services implies the possession of his person; and the possession of his person implies the possession of his life. Moreover, from the exaggerated notions of the domestic ties which usually prevail in early times, the person of the individual, where that individual is the father of a family, brings with it that of his wife, his children, and his slaves. The creditor thus becomes the absolute master of the life and liberty of his debtor, and of all those dependent upon him. The arrangements of the Mosaic Law are an illustration of the manner in which, in the ruder forms of society, the laws of debt thus combine a degree of lenity with a degree of severity which equally are alien to modern views. In this as in many other respects, they are, as Michaelis has pointed out (II. 300), a recognition of the consuetudinary law of the stage of society to which they belonged; though they seem also modified in accordance with the peculiar position of the Jewish nation as the chosen people, the special household of God, than a system special to the Jews. If an Israelite became poor and in want, it was a duty to lend to him, and no interest was to be exacted either in money or in produce: he was a poor brother in the family. With a foreigner, the case was different, and the taking of interest was legal (Exod. xxii. 25; Deut. xxiii. 19, 20; Lev. xxv. 35-38). When the Sabbatical year arrived—i.e., at the end of every seven years—there was a general remission of debts as between Israelite and Israelite; and the near approach of the year of remission was not to be recognized as an apology for declining to lend to an indigent brother (Deut. xv. 1-11). Pledges, it is true, might be taken, but even here the same humane principles prevailed. The upper millstone was sacred, for to take it would be to deprive the debtor of the means of subsistence. If raiment was the pledge, it must be returned before nightfall, when it might be required for a covering; and the widow's garment could not be taken in pledge (Exod. xxii. 26, 27). In strange contrast to this is the provision (Lev. xxv. 39) that a poor Israelite may be sold to an Israelite possessed of substance, even when modified by the special provision that he shall serve as a hired servant, not as a bond-servant, and shall be set at liberty when the year of jubilee arrived. Michaelis says that the judicial procedure for debt was quite summary, the most important causes being decided probably in a single quarter of an hour; and he remarks that Moses nowhere thinks it necessary to mention how a debt was to be proved before a judge. There was, however, an extensive system of appeal; from the judge over 10, the case was carried to the judges over 50, 100, and 1,000, and finally to Moses himself. As every Israelite was entitled to claim the land of his fathers at the jubilee year, and thus to place matters on the footing on which they were after the settlement in Palestine, debts and burdens on land were limited to claims to the fruits of forty-two harvests; but houses, with the exception of those of the Levites, might be sold in perpetuity (Lev. xxv. 29, 30, 32, 33). Children were in some cases given in pledge (Job xxiv. 9), and ultimately into slavery, in payment of debt (2. Kings iv. 1). Subsequent to the Captivity, the pressure of debts upon the poor in Israel became so intolerable, that Nehemiah espoused their cause, and insisted on a general remission (Nehem. v.), exacting from the rich an oath that they would never afterward press for payment. Debts of the character here alluded to probably resembled those which the recipients of parochial relief at the present day owe to the community, rather than debts in the commercial sense. In Matt. xviii., Christ refers to the custom of selling the debtor, his wife and children, and all that he had, in payment, rather as a general custom of all nations, than as one peculiar to the Jews—the 'certain king' being a typical instance of a man of substance.

Both in Greece (Plut. Vita Solonis 15) and in Rome (A. Gell. xx. 1, 19; Liv. ii. 23) the creditor had a claim to the person of the debtor. Previous to the time of Solon, this arrangement had produced consequences at Athens closely analogous to those which afterward led to the struggles between the patricians and plebeians at Rome; and his abolition of it forms one of Solon's many claims to the character of an enlightened legislator. By the Twelve Tables, it was enacted at Rome that if the debtor admitted the debt, or had had judgment pronounced against him for it, 30 days should be allowed him for payment. At the expiration of that period, he was liable to be given into the hands of his creditor, who kept him 60 days in chains, exposing him on three market days, and proclaiming his debt. If no one stepped in to release him, the debtor at the end of that time might be sold for a slave, or put to death. If there were several creditors, the letter of the law permitted them to cut their debtor in pieces, sharing him in proportion to their claims; but Gellius tells us that no Shylock ever was found at Rome. To treat him as a slave, however, and make him work out the debt, was the common practice; and the children in his power, in accordance with the whole constitution of society at Rome, followed his condition. The lex Pœtelia (B.C. 326) alleviated the condition of the debtors (*nexi*), by prohibiting the voluntary alienation of personal freedom. It is uncertain whether it is also put an end to the involuntary alienation by the execution of judgment debts. 'During the *Republic* a debtor could not be taken as a slave to satisfy a judgment debt. The imprisonment of the debtor in a public prison took the place of his reduction to slavery' (c. vii. 71, 1). Great prominence was given by the plebeians to a change in the laws of debtor and creditor, on the occasion of their first secession, B.C. 494; and subsequently during the whole course of the struggles between the two orders. At Rome the creditor was not bound to maintain his debtor in prison, but it was an offence to prevent food and bedding being supplied. In A.D. 320 Constantine abolished imprisonment for debt, unless the debtor was contumacious. Under modern Christian civilization the propriety of abolishing the right of private imprisonment must be conceded.

During the feudal period, the person in general was not attachable for debt, imprisonment being inconsistent with the duties of warlike service to which every man was bound; and it was for the encouragement of commerce, and in consideration of the merchant having to deal with strangers and foreigners, that it was first introduced by the mercantile communities of Europe (Bell's *Commentaries*, seventh ed., II., 431). By the statute of Merchants, it was enacted, at Acton Burnel, England, 1282, that in lending money, a merchant might bring the borrower before the lord mayor of London, or the chief warden of another good town, and cause him to acknowledge his debt and day of payment. A recognizance was then enrolled, and an obligation written by the clerk, and sealed with the king's seal and the debtor's. Failing payment, the creditor was entitled to produce this obligation, and to demand a warrant to seize the person of his debtor, and to commit him to the Tower. The history of the law of imprisonment for debt in England is stated with great clearness by Mr. Bell in the section of his *Commentaries* to which we have just referred: see also IMPRISONMENT: DILLIGENCE: EXECUTION: SANCTUARY: INSOLVENCY: etc. Generally, till the passing of the later bankrupt acts, the prisons of Britain were crowded with debtors. It was ascertained by parliamentary returns, that in the 18 months subsequent to the commercial panic of 1825, 101,000 writs for debt were issued from the English courts. The returns for 1880, which do not distinguish between debtors and other civil prisoners, give as the number of debtors and others under civil process in prison in England and Wales, 7771. In 1880, there were 145 persons imprisoned in Scotland under decrees of aliment: See DEBTS, IMPRISONMENT FOR: DEBTS, RECOVERY OF.

At present (1888) there are no uniform laws in the United States by which an insolvent debtor can be released from the obligation due a creditor; and as under the constitution congress alone has the right to establish uniform laws governing bankruptcies, the only relief now to be obtained must be sought under the varying insolvent laws of the different states. In all these the constitutional prohibition against any state passing laws that may impair the obligations of contracts has to be rigidly observed. Three national bankrupt acts have been passed by congress, and all met with opposition from large business interests. The first, 1800, based on English laws, was repealed 1803; the second, adopted 1841, was pronounced unconstitutional and repealed 1843; and the third, adopted 1867, was repealed 1878. Since then numerous bills, providing a national law, have been before congress, of which that drawn by Judge John Lowell, of the United States circuit court, has received the most favorable consideration from members of congress, the national and state boards of trade, and business men generally; but no decisive action has yet been taken. The national law of 1867 authorized the seizure of all the debtor's property, and its division among his creditors in proportion to their respective claims; thus interposing a barrier against the debtor giving preference to one creditor over another. The state laws, however, permit this preference, and under them the courts also have given and continue to give precedence to their own citizens who, as creditors, attach or seize the property of an insolvent debtor, over an assignee or trustee for all creditors equally, including their own citizens who may lay claims under a decree in bankruptcy made in another state. The most common modes of effecting a release of obligation between an insolvent debtor and the body or creditors are (1) by all the parties interested executing what is known as a 'composition deed,' in which the creditors agree to accept a certain percentage in full satisfaction of their claims, and on its payment to give the debtor a complete release; the payment may be in a gross and immediate sum, or part cash and part notes for stated periods, or wholly by notes maturing at specified times; and (2) by the insolvent debtor executing an assignment of all his property to a disinterested person for him to manage for the mutual benefit of all. In cases where large business interests are involved, the composition deed enables the debtor to continue his business without material interruption and thus acquire the means of fulfilling his part of the agreement, and the assignment, being governed by the general rules pertaining to all kinds of assignments in trust, guarantees that the trust will be honestly administered and for the largest benefit to all. A trustee under an assignment is competent to continue the business till the creditors are satisfied with the share of profits falling to them, and when so satisfied the trustee may be discharged and the business returned to the released debtor. The rules governing both modes, as well as the details of minor cases of insolvency, are provided either by statutes, codes of procedure, or rules of courts which have had the authority to make such rules delegated to them by legislatures. They vary more or less in every state, and are drawn in harmony with the local laws relating to the character and amount of property exempt from attachment or levy and sale on execution, those defining the rights of landlords and tenants, employers and employees, and married women having property in their own right, and the various kinds of liens upon real estate.

DEBTS, RECOVERY OF: species of action frequent in courts of law. The great majority of the cases of debt in which the services of courts are required is of a kind in which there is no question of law or of fact—the debtor having no defense to make. The statistics of the English county courts give a striking illustration: of the number of cases entered for judgment, it appears that about 95 per cent. end in favor of the plaintiff; whereas, had there been any question really in dispute, the defendants, with the advantages which they possess, might have been expected to be at least as often right as the plaintiffs. The consequences of issuing a decree are now much less serious than formerly, as a creditor holding a judgment has not now the exorbitant powers over his debtor that he once had. The theory, accordingly, on which judicial proceedings are based, has very much changed. Formerly, lawyers thought that every case should come into court, prepared for being disputed on every point, and thus much expense was incurred before it was known whether there was to be any dispute at all. The end now in view is, that there should be a cheap means of obtaining judgment in undisputed causes; and that, at the same time, every precaution be taken that if the defender has any good ground of defense, he should have the opportunity of stating it; and that, when stated, it should receive due attention. Various law reforms have been carried to facilitate the recovery of debts with this end tacitly, at least, in view.

In Great Britain, if the debt—being the price of services rendered or of goods furnished—exceed £500 in amount, the creditor must, in England, proceed in one of the superior courts of law; and in Scotland he may proceed either before the superior court or before one of the sheriff-courts; but in any view, in the case of such a debt, he must prepare for considerable expense—the services of professional advisers being in practice unavoidable. If the debt do not exceed £50, the creditor may proceed in the English or Scotch county courts (in Scotland called the sheriff-courts), and the proceedings are simple and expeditious.

In the United States ample provisions of law exist for the recovery of the smallest debt one person may owe another; but the manner in which the action to recover must be taken depends in general on the amount of the obligation. Several states have tribunals for the collection of small sums, known as courts of small causes; in most of them, however, civil jurisdiction is vested in justices of the peace, who otherwise exercise criminal authority, for the purpose. The amount of money over which such officers have jurisdiction, varies from $20 in Me. to $500 in Tenn.; viz: Va., $50; Ala., Conn., Dak. Terr., Del., Fla., Ga., Id. Terr., Ky., La., Md., Minn., N. H., N. J., N. Mex., R. I., S. C., Wash. Terr., W. Va., Wyo., Terr., each $100; Miss., $150; Ill., Ind., Neb., N. C., N. Y., Tex., Vt. each $200; Or. $250; Ark., Cal., Col., Kan., Mass., Mich., Mo., Nev., O., Penn., Utah., Wis., each $300; in La. the statute limit is $100, but where both parties consent a justice can act on cases involving not over $300. The law, as to where the debtor can be sued, varies in different states. In some it must be done in the town or city where he resides; in others a greater latitude is allowed. So, too, as to the manner of the preliminary action.

In some states he is served with a summons on which the justice does or does not indorse the amount demanded by the plaintiff with the costs due on the same, when he may pay the amount to the constable or appear for trial; in others, especially where the amount sought to be collected exceeds the jurisdiction of the justice, the plaintiff may apply to the clerk of the lowest court having jurisdiction according to the amount involved, who will issue a summons and have it served by the sheriff or a deputy, and place the case on the docket for trial. When a justice or a jury has decided that a debtor must pay a claim with costs, the debtor may appeal to the next higher authority, but before doing so he will be required to file a bond, with two or more responsible sureties who sign for double the amount claimed, to secure the payment of costs should he lose the suit. Should the second decision also be adverse to him, he may carry his suit to the supreme court of the state on filing another bond to secure costs. In ordinary cases an appealed suit ends with the decision of the supreme court. Where, however, the amount involved is very large or peculiar conditions attach to the suit, it may be further taken to the court of errors and appeals, and, if deemed necessary, to the supreme court of the United States. The creditor is entitled to the same privileges of appeal should the first decision be adverse to him. Each appeal increases the costs, and by them a simple case may be kept from final adjudication for many years. In many cases a debtor will settle a claim when served with a summons, rather than risk a greater accumulation of costs. Should a defendant fail to appear in a hearing before a justice, that official will proceed without him, hear the case, and if the claim is proved, enter judgment against the defendant for the amount due the plaintiff, and then issue an execution for its collection. An execution is issued also where a decision is rendered against a defendant, and he fails to satisfy the judgment. It is now the almost invariable rule to issue an execution authorizing an officer to levy upon the personal property of the debtor; if he have none, then upon the real; if none of that, then upon store goods, etc. A debt may be secured, in some states, also by suing a third person who may be owing the defendant: this is called suing the garnishee. In levying on property under an execution the officer is obliged to use extreme caution, lest he select property exempted by law from sale or attachment, property already attached, or property covered by a chattel mortgage. The amount and kinds of personal property exempted from seizure on execution are prescribed by the laws of the states, and differ in each.

DEBTS, SMALL: see SMALL DEBTS.

DEBUSCOPE, n. *dĕ'bŭs-kōp* [from the inventor, M. *Debus*, a French optician; and Gr. *skopeō*, I see]: modification of the kaleidoscope. It consists of two highly polished silvered plates, set at an angle of 70° with each other; particularly intended for the use of draftsmen who are required to design ornamental patterns for fabrics.

DÉBUT, n. *dĕ-bô'* [F.]: entrance; first appearance; first step or attempt; specially the first appearance of an actor or actress on the stage, or of a musical performer in public; sometimes the first appearance in a particular place. DÉBUTANT, n. *dĕb'ô-tăng'*, a man who makes a first appearance as a performer; a novice. DÉB'UTANTE, n. *-tăngt'*, an actress or performer who makes her first appearance before the public.

DECA, *dĕk'a* [Gr. signifying 'ten']: of frequent occurrence in composition; as in *Decapolis*, union of ten cities; *Decalogue*, the ten commandments; *decamètre*, a measure of ten mètres, etc.

DECACHORD, n. *dĕk'ă-kawrd* [Gr. *deka*, ten; Gr. *chordē;* L. *chorda*, a string]: ancient kind of guitar with ten strings, similar to the common guitar, only larger in the body, and with a broader finger-board. The lower strings have no frets, being only used as open notes.

DECADE, n. *dĕk'ād* [F. *décade*—from Gr. *dekas*, the number ten; *dekădos*, of the number ten]: the sum or number of ten; a group of ten, as of years. DEC'ADAL, a. *-ă-dăl*, pertaining to or consisting of ten.—*Decade*, as applied to time, was used in the calendar of the French republic to designate their week of 10 days. Each month, of 30 days, was divided into three decades. The days of each decade were named *primidi, duodi, tridi, quartidi, quintidi, sextidi, septidi, octidi, nonidi*, and *decadi*. The tenth, or *decadi*, was the day of rest; and, as the republic acknowledged no definite religion, was devoted to the practice of and exhortation to virtue. The republican year numbered 36 decades, and had thus only 360 days. The remaining five (in leap years, six) were devoted as holidays at the end of the year without being numbered.

DECADENCE, n. *dĕ-kā'dĕns*, or DECA'DENCY, n. *-dĕn-sĭ* [F. *décadence*—from L. *de, cadens*, falling]: state of decay. DECA'DENT, a. *-dĕnt*, decaying.—Decadence in art characterizes the state of a school of art which has passed the period of its highest excellence. In Greece, art in all its forms reached it acme in the time of Pericles; and though many exquisite works were produced at a later period, they all belong, more or less conspicuously, to the decadence of Greek art. In Rome both art and literature culminated in the time of Augustus, and from that time a decadence set in which soon became very obvious and rapid. The school of the *Renaissance* came to perfection with Raphael; even the Caracci belong to its decadence; and the decline was continuous through the *rococo* of Louis Quinze, till art became nearly extinct all over Europe. In the beginning of the reign of George IV., it probably reached as low a point in England as it ever attained in any civilized country; and it is only within the last 30 years that it has begun to revive.

DECAGON, n. *dĕk'ă-gŏn* [Gr. *deka*, ten; *goniă*, a corner]: in *geom.*, plane geometrical figure of 10 sides. When the sides are equal, the figure is called a regular decagon. A decagon may be formed from a pentagon (q.v.), by forming any irregular triangles on its sides in such a way that no two of them shall have their sides in the same straight line. A regular decagon is got from a regular pentagon by describing a circle round the latter, bisecting the arcs between its angular points, and drawing lines joining the angular points to the points of section.

DECAGRAM, or DECAGRAMME, n. *dĕk'a-grăm* [F. *déca gramme*—from Gr. *deka*, ten: F. *gramme* (q.v.), a weight]: a French weight of ten grammes, or 154 + grains.

DECAGYNIAN, a. *dĕk'ă-jĭn'ĭ-ăn* [Gr. *deka*, ten; *gūnē*, a female]: in the *Linnæan system*, pertaining to the order of plants *Decagyniă*, having ten pistils, or whose pistils have ten free styles.

DECAHEDRON, n. *dĕk'ă-hē'drŏn* [Gr. *deka*, ten; *hedra*, a base, a seat]: a solid figure with ten sides. **DEC'AHE'DRAL**, a. having ten sides.

DECAISNEA, *dĕ-kā'nē-a* or *dĕ-kās'nē-a:* genus of plants of the nat. ord. *Lardizabalaceæ*, nearly allied to *Stauntonia*. It contains only one known species, recently discovered, native of the Himalaya Mountains, at an elevation of 7,000 ft. It is a very remarkable plant, and the only one of its nat. ord. which is not a climber, It sends up from the root several straight erect branches like walking-sticks, which bear spreading pinnated leaves, two ft. long, standing out horizontally. The flowers are unisexual, green, and in racemes. The fruit is yellow, resembles a short cucumber, being about four inches long, and one inch in diameter. It is full of a soft milky pulp and large black seeds. Two or three fruits grow together. The pulp is sweet and wholesome, much eaten by the natives of the Himalaya.

DECALITER, n. *dĕk'ă-lē'tr* [Gr. *deka*, ten: F. *litre*, a quart]: in the *French metric system*, a measure of capacity of ten liters: see LITER.

DECALOGUE, n. *dĕk'ă-lŏg* [F. *décalogue*—from Gr. *deka*, ten ; *logos*, speech or word]: the ten commandments: the term usually applied by the Greek Fathers to the law of the two 'tables of testimony' given by God to Moses on Mount Sinai. These tables were made of stone, and the commandments inscribed thereon are said to have been 'written by the finger of God.' The commandments are not numerically divided in the Pentateuch, and it has been supposed by some that the number *ten* was chosen, because ten was considered the most perfect number. As, however, there *are* ten distinct injunctions, it is superfluous to allege any other reason for the division than the simple fact, that this is the correct enumeration. Philo-Judæus divides them into two *pentads*, the first ending with 'Honor thy father and mother,' etc ; but the general opinion among Christians is, that the first table contained those which enjoin man's duty to God (comprising the first four), and the second, those which enjoin upon us man's duty to his fellow-creatures (comprising the last six). The Talmudists make the introductory words, 'I am the Lord thy God, who brought thee out of the land of Egypt, out of the house of bondage,' to be the first commandment, and in consequence, to keep the number *ten* are obliged to run the next two into one. But the words quoted obviously contain no *command* but are a preface setting forth the grand general reason why the Israelites should yield implicit obedience to the injunctions which follow. Hence Origen commences the D. with, 'Thou shalt have no other gods before me.' His division is that in use in the Greek, and in all the Protestant churches except the Lutheran; while from the writings of Philo and Josephus, it appears that this was the received division of the Jewish Church also. The Masoretic division is that which is adhered to in the Rom. Cath. and Lutheran churches. According to it, the first two commandments, that concerning the worship of God, and that concerning the worship of graven images, constitute but one. The number ten, however, is here also preserved by dividing the tenth into two, the first of which is made to be, 'Thou shalt not covet thy neighbor's house,' and the second, 'Thou shalt not covet thy neighbor's wife, nor his manservant,' etc., to the end. There are two versions of the D. in the Pentateuch; the first in Exodus xx., the second in Deut. v. These are substantially and almost verbally the same, except in regard to the fourth commandment, for the observance of which the reason assigned in the former differs from that in the latter.

DECAMERON: see BOCCACCIO.

DECAMETRE, n. *dĕk'ă-mā'tr* [Gr. *deka*, ten: F. *mèter* (see METRE 2)]: a French measure of length, nearly eleven English yards.

DECAMP, v. *dĕ-kămp'* [F. *décamper*, to march off—from L. *dis*, away; It. and Sp. *campo;* L. *campus*, a plain]: to remove from a camp; to walk or move off; to depart hastily. DECAMP'ING, imp. DECAMPED', pp. *-kămpt'*. DECAMP'MENT, n. departure from a camp.

DE CAMP, JOHN C., U.S.N.: 1812–1875, June 25; b. N. J. He entered the U. S. navy as midshipman 1827, became passed midshipman 1833, lieut. 1838, commander 1855, capt. 1862, commodore 1866, and was retired with the rank of rear-admiral 1870. During his service he was attached to the *Constitution* on the African coast 1854, was light-house inspector, commanded the *Iroquois* in the attack on Forts Jackson and St. Philip and at the capture of New Orleans, 1862, and took part in the siege of Vicksburg and in numerous operations on the Mississippi.

DECAMPS *dĕh-kŏng'*, ALEXANDRE-GABRIEL 1803–1860, Aug. 22 b. Paris: French painter. He was a pupil of De Pujol, but soon began a style of his own, which was long in becoming popular. About 1860 he made a tour in the East, and for several years after his return he painted chiefly eastern subjects. Gradually, but slowly, his works grew into favor. He painted landscapes, genre pieces, and historical pictures; but his animal pictures first attained popularity among his countrymen. The monkey was his specialty; and into such pictures D. introduced much of that humor for which he was so distinguished. His historical pieces are now considered by English critics among the finest productions of the French school. In this class of works his conceptions were both fine and grand; but his treatment was free even to irregularity. His drawing was often careless and sometimes defiant of perspective for the sake of some favorite effect. D. was made a chevalier of the Legion of Honor 1839, and became officer 1851. He died at Fontainebleau.

DECANAL, a. *dĕk'ă-năl* [see DEAN]: pertaining to a deanery.

DECANDOLLE, *dĕh-kŏng-dol'*, AUGUSTIN PYRAME: eminent botanist: 1778, Feb. 4—1841, Sep. 9; b. Geneva: descended from an ancient noble family of Provence, which was compelled to seek refuge in Geneva from religious persecution about 1668. His father was a syndic of Geneva, and had an estate near Yverdun, where much of D.'s boyhood was spent. He received his education in the gymnasium of Geneva, distinguished himself by his attainments in classical scholarship and his love of poetry, as well as by his delight in the study of history, to which and to the profession of law he proposed to apply himself. But after he had begun his studies for this profession, the union of Geneva with the French republic in 1798 made such a change in his prospects, that he thought proper to relinquish it for that of medicine and botany. He prosecuted his studies in Paris, where his botanical publications soon won for him a distinguished place. A work on Succulent Plants (Par. 1799–1803), one on the species of *Astragalus* (Par. 1802), and some less important works, were followed by his extremely valuable *Essai sur les Propriétés Médicales des Plantes* (Par. 1804). He delivered his first botanical lectures in the Collége de France. In 1804, appeared the first vol. of his *Flore Française.* Employed by the govt., he visited all parts of France and Italy, 1806–12, investigating their botany and agriculture. On the fall of Napoleon, he was compelled to retreat to Geneva, where a professorship of botany was founded for him, and where he spent the remainder of his life. His *Théorie Elémentaire de Botanique* (Par. 1813) was followed by *Regni Vegetabilis Systema Naturale* (2 vols. Par. 1818–21), and *Prodromus Systematis Naturalis Regni Vegetabilis* (vols. 1–10, Par. 1824–46). These works greatly promoted botanical knowledge. D.'s labors established and improved the natural system which Jussieu had attempted to found: see BOTANY. The latter years of D.'s life were years of sickness and suffering, and he died of dropsy. He bequeathed his collections—including a herbarium of more than 70,000 species of plants—to his son, ALPHONSE D., on condition of his keeping them open to the public, and of his carrying on the *Prodromus.* The younger D., who completed the work with the 17th vol., is a botanist of no mean fame, and author of several botanical works, among which are: *Introduction à la Botanique*

(1835), and *Géographie Botanique* (1855); also *Histoire des Sciences* (1872).

DECANDRIAN, a. *dĕ-kăn′drĭ-ăn,* or Decan′drous, a. *-drŭs* [Gr. *deka,* ten; *aner* or *andra,* a male]: in the *Linnæan system,* pertaining to the order of plants *Decandriă,* having ten stamens.

DECANGULAR, a. *dĕk-ăng′ū-lėr* [Gr. *deka,* ten: L. *angŭlus,* a corner]: having ten angles.

DECANT, v. *dĕ-kănt′* [F. *décanter,* to decant—from It. *decantare,* to pour wine out gently: Icel. *kantr,* a side: Dan. *kant,* the edge: Eng. *cant,* to tilt up on one side, so as to rest on the other edge: L. *canthus,* the rim of a wine-jar]: to pour off a liquid from a vessel by tilting it on edge, so as not to disturb the grounds; to pour from one vessel into another. Decant′ing, imp. Decant′ed, pp. Decan′ter, n. *-tėr,* a glass bottle used for holding liquors, from which they may be poured into drinking glasses. Decantation, n. *dē′kăn-tā′shŭn,* the act of pouring from one vessel into another.

DECAPITATE, v. *dĕ-kăp′ĭ-tāt* [mid. L. *decapĭtātus,* beheaded: F. *décapiter,* to behead—from mid. L. *decapĭtārĕ*—from L. *de, caput,* the head]: to behead; to cut off the head. Decap′itating, imp. Decap′itated, pp. Decap′ita′tion, n. *-tā′shŭn,* the act of beheading: see Capital Punishment.

DECAPODA, n. plu. *dē-kăp′ō-dă* [Gr. *deka,* ten; *pous* or *poda,* a foot]: the highest order of crustacea having ten legs or claws, as the common crab, the crayfish, the lobster, and the prawn; also an order of cuttle-fishes. Decapod, n. *dĕk′ă-pŏd,* an animal having ten feet: Adj. having ten feet. Decapodal, a. *dē-kăp′ō-dăl,* ten-footed: see Crab: Crustacea.

DECAPOLIS, *dē-kăp′ō-lĭs:* district of e. Palestine, near the sea of Galilee, on both sides of the Jordan; deriving its name from a group of ten cities, Canatha, Damascus, Dion, Gadara, Gerasa, Hippos, Pella, Philadelphia, Raphana, and Scythopolis. They are supposed to have been first built by the Greeks, afterward settled by the followers of Alexander the Great, subdued by the Maccabees, and rebuilt, colonized, and granted special political privileges by the Romans after the conquest of Syria, B C. 65. Canatha, Damascus, Gadara, and Scythopolis are the only ones now inhabited, and Damascus is the only one of material importance. All, however, except Raphana, have been identified. Scythopolis, formerly second in importance, is now the village of Beisan, and was the only one of the group on the w. side of the river.

DECARBONIZE, v. *dē-kâr′bō-nīz* [L. *de,* down; *carbōnem,* coal]: to deprive of carbon. Decar′boni′zing, imp. Decar′bonized, pp. *-nīzd.*

DECASTICH, n. *dĕk′ă-stĭk* [Gr. *deka,* ten; *stichos,* an order, a row, a line]: a poem consisting of ten lines.

DECASTYLE, n. *dĕk′ă-stīl* [Gr. *deka,* ten; *stulos,* a column]: a portico having ten pillars or columns in front.

DECASYLLABIC, a. *dĕk'ă-sĭl lăb'ĭk* [Gr. *deka*, ten; *sullabē*, a syllable]: having ten syllables.

DECATUR, *dē-kā'tėr:* city, cap Macon co., Ill.; on the Sangamon river; 39 m. e. of Springfield, 44 m. s. of Bloomington, 109 m. n.n.e. of St. Louis. It is an important railroad centre, is on the Ill. Central, Indianapolis Bloomington and Western, and Pekin Lincoln and D. railroads; is the w. terminus of the Indianapolis D. and Springfield railroad, and is connected with St. Louis, Springfield, and Quincy by branches of the Wabash, and with Terre Haute and Peoria by the Ill. Midland railroads. It is in a rich agricultural region, manufactures large quantities of beer and ale, woolen goods, flour, iron, agricultural implements, carriages, steam engines, boilers, furniture, bricks, and linseed oil, has a co. court house, a high school, and 24 public schools, Rom. Cath Acad., convent, 1 national (cap. $100,000) and 3 other banks, and 2 daily and 3 weekly newspapers. There are 21 churches: Meth. Episc. 6, Bap., Rom. Cath., Christian, Prot. Episc , Lutheran, Presb., 2 each; Church of God. Unit. Brethren, Univ., 1 each. Pop. (1870) 7,161; (1880) 9,547.

DECATUR, Battle of: in De Kalb co., Ga.; 1864, July 20. A portion of Gen. Sherman's army, then on the march toward Atlanta, commanded by Gens. Thomas and Schofield, on reaching Decatur. village 5 m. e. of Atlanta, was overtaken by a Confederate force under Gen. Hood. An attack was made upon the Union line at Stone Mountain, 6 m. e. of the village. The left of the line was forced back some distance, but on the right Gen. Hooker repulsed several attempts of the enemy to separate the force from the main army, and at night the Confederates retired. The Union loss was estimated at 1,500 in killed and wounded; and the Confederate at 5,000, of whom 500 dead and 1,000 severely wounded were left on the field.

DECATUR, Stephen, u.s.n.: 1751–1808, Nov. 14; b. Newport, R. I. In early life he engaged in the merchant marine service and became capt. of a vessel. He served in the revolutionary war as commander of two noted privateers, the *Royal Louis* and the *Fair American*, with which he inflicted considerable losses on English merchantmen; became post-capt. in the navy 1798, and as commander of the *Delaware* captured two fleet French privateers; commanded the Guadeloupe squadron of 13 vessels 1800; and was discharged from service and engaged in business in Philadelphia 1801.

DECATUR, Stephen, Jr., u.s.n.: son of Capt. S. D.: 1779, Jan. 5—1820, Mar. 22; b. Sinnepuxent, Md. He was bred to a sea-faring life, appointed midshipman in the navy 1798, commissioned lieut. 1799, promoted capt. 1804, and commodore 1810. While serving with the squadron sent to Tripoli after the pasha's declaration of war against the United States, 1801, he distinguished himself by many acts of heroism; particularly in 1804, Feb., when he led a picked crew into the harbor, recaptured the U. S. frigate *Philadelphia*, that had been captured while fast on a reef, set her on fire under the guns of the castle, and escaped to his vessel without injury. The *Philadelphia* was totally destroyed, and the daring lieut. promoted capt. for his exploit. Later in the war he commanded the frigates *Constitution* and *Congress*. In 1810 he was assigned to command the frigate *United States*, which he had helped build, and with it captured the British frigate *Macedonian* at sea, 1812, Oct. 25. For this feat congress voted him a sword and a gold medal. He took his prize into New York harbor, whence, 1813, May 24, he attempted to sail with a squadron of 4 vessels, but was intercepted by part of the British blockading fleet off Montauk Point, L. I., and entering the harbor of New London was blockaded there over a year. He then received command of the frigate *President*, and while attempting to get to sea from New York, 1815, Jan., the vessel was considerably injured by striking the bar. She was pursued by four British frigates, and after a running fight of 8 hours, Com. D. was compelled to surrender, and with his ship was taken to Bermuda and there paroled. In 1815, May, he was sent with a squadron of 3 frigates and 7 other vessels to punish the Barbary powers for violation of their treaty obligations and their seizure of American merchantmen. He captured the Algerine flag-ship and admiral and a brig of war, June 18, arrived off Algiers June 28, and forced the dey to sign a treaty stipulating among other things that all Christian captives should be immediately released and that the United States should pay no more tribute to the dey. He then demanded indemnity and the release of prisoners of the bey of Tunis and the pasha of Tripoli, obtained prompt redress, and returned to the United States. In Nov. he was appointed a member of the board of naval commissioners, and held the office till his death, which was caused by a wound received in a duel with Com. James Barron at Bladensburg.

DECATUR, STEPHEN, U.S.N.: grandson of Capt. S. D., nephew of Com. S. D., Jr.: 1815–1876, Jan. 9; b. N. J. He entered the U. S. navy as a midshipman 1829, Mar. 17, was promoted to passed midshipman 1835, July 3, commissioned lieut. 1840, Feb. 25, commander 1861, July 20, capt. 1867, and commodore 1869. He was unemployed 1835–50, on the reserve list 1857–61, and on waiting orders 1864–66, and had served with the Mediterranean, Brazilian, West Indian, and East Indian squadrons.

DECAY, v. *dĕ-kā'* [Prov. *descaier;* F. *déchoir*, to fall away, to go to ruin—from L. *de; cădo*, I fall]: to fall away; to become less perfect; to fail; to decline; to waste away: N. a falling away; a gradual failure; decline of fortune; corruption; rottenness: see DRY ROT. DECAY'ING, imp. DECAYED', pp. *-kād':* ADJ. reduced in means; impoverished; wasted away; rotten. DECAY'EDNESS, n. *-kā'ĕd-nĕs*. DECAYER, n. *dĕ-kā'ėr*, in *OE.*, that which decays; a causer of waste.—SYN. of 'decay, v.': to die; perish; impair;—of 'decay, n.': consumption; failure.

DECAZEVILLE, *dĕh-kâz-vēl':* town in the dept. of Aveyron, south of France. It has extensive blast-furnaces and iron-works, said to be superior to any in France, and which, with the iron and coal-mines of the neighborhood, afford employment to the mass of the inhabitants. Pop. 6,000.

DECCAN, *dĕk'kan* [Skr. *Dakshina*, the south]: term applied sometimes to the whole peninsula of Hindustan s. of the Vindhya Mountains which separate it from the basin of the Ganges; and sometimes restricted to that portion of the same vaguely bounded n. by the Nerbudda which falls into the Gulf of Cambay, and s. by the Kistna or Krishna, a tributary of the Bay of Bengal. Independently of this indefiniteness of meaning, the name, like that of the Carnatic (q.v.), is rather of historical interest than of actual use.

DECEASE, n. *dĕ-sēs'* [OF. *deces;* F. *décès*, decease—from L. *decessus*, departed--from *de*, *cessus*, gone: It. *decesso*]: departure from this life; death: V. to die. Deceas'ing, imp. Deceased', pp. *-sēst'*.—Syn. of 'decease, n.': departure; demise; release.

DECEIT, n. *dĕ-sēt'* [OF. *decever;* F. *décevoir*, to deceive—from L. *decipĕrĕ*, to take away, to deceive—from *de*, *căpĕrĕ*, to take]: that which ensnares; the misleading any person; the leading of a person to believe what is false, or not to believe what is true; deception; fraud; trick; device. Deceit'ful, a. *-fûl* tending to deceive or mislead; fraudulent; insincere. Deceit'fully, ad. *-lĭ*. Deceit'fulness, n. Deceive, v. *dĕ-sēv'*, to mislead the mind; to cause to believe what is false, or not to believe what is true; to impose on; to cheat; to disappoint. Deceiv'ing, imp. Deceived', pp. *-sēvd'*. Deceiv'er, n. one who. Deceiv'able, a. *-ă-bl*, capable of being misled. Deceiv'ably, ad. *-blĭ*. Deceiv'ableness, n. *-bl-nĕs*, liableness to be deceived; likely to deceive.—Syn. of 'deceit': illusion; delusion; stratagem; artifice; imposition;—of 'deceive': to delude; mislead; beguile; ensnare; entrap; defraud.

DECEMBER, n. *dĕ-sĕm'bėr* [L. *december*—from L. *decem*, ten — *-ber* may be connected with Skr. *vara;* Pers. *bar*, time or period]: the twelfth and last month of the year—formerly the tenth month according to the old Roman calendar before the time of Julius Cæsar, when the year began with March. The Saxons called this month Mid-winter-month, and Yule-month.

DECEMPEDA, n. *dĕ-sĕm'pĕ-dă* [L. *decem*, ten; *pedēs*, feet]: a ten-foot rod employed by architects and surveyors for taking measurements. Decem'pedal, a. *-dăl*, ten feet long.

DECEMVIR, n. *dĕ-sĕm'vėr* [L. *decem*, ten; *vir*, a man; *vī-rī*, men]: one of the ten magistrates of anc. Rome who, for a short time, possessed absolute power. Decem'viri, n. plu. *-vĭ-rī*. Decem'viral, a. *-vĭ-răl*, pertaining to. Decem'virate, n. *-rāt*, the office of a decemvir; the period or duration of government by decemvirs.—The Decemviri were appointed as a sort of legislative committee, to draw up a code of laws at Rome. The ground-work on which they proceeded, was the information previously collected by three commissioners sent for that purpose to Greece. On the return of the three commissioners, after a year's absence, a violent dispute arose between the patricians and plebeians as to which of the orders should be intrusted with the revision of the laws. The dispute ended in favor of the patricians, and 10 patrician lawgivers were consequently appointed, to whom, moreover, the whole government of the state was intrusted during the year for which they were to hold office. The experiment was eminently successful; the work of legislation was carried on with zeal and success, and the state was governed with prudence and moderation. Their labors not being quite finished, a new body of decemviri was appointed; only *one*, the notorious Appius Claudius, belonging to the previous commission. In their magisterial and executive capacities, the new decemviri acted in the most tyrannical manner. In place of the fasces alone being carried before the D. who presided for the day, as on the former occasion, each of the ten was now attended by 12 lictors, who carried not only the rods, but also the ax, the emblem of sovereign power. Every species of outrage was committed on the persons and families of the plebeians, and when the term of their appointment expired, they refused either to resign or to allow successors to be appointed to them. At length the iniquitous decision of Appius Claudius (q.v.) in the matter of Virginia brought affairs to a climax. A popular insurrection broke forth, the decemviri were driven from their office, and the tribunes and other ordinary magistrates of the republic were reappointed. The occurrence is the subject of one of Macaulay's most spirited *Lays of Ancient Rome.*

DECENCY, n.: see under DECENT.

DECENNARY, n. *dē-sĕn'nėr-ĭ* [L. *decem*, ten; *annus*, a year]: a period of ten years: see TITHING. DECEN'NIAL, a. *-nĭ-ăl*, lasting for ten years; happening every ten years. DECEN'NIALLY, ad. *-lĭ*. DECENNIAL GAMES, in Rome, recurring every ten years, in honor of the refusal of Augustus to be made emperor for life, and of his proposal to be re elected every 10 years.

DECENNOVAL, a. *dĕ-sĕn'nō-văl*, or DECEN'NOVARY, a. *-vėr-ĭ* [L. *decem*, ten; *novem*, nine]: pertaining to the number nineteen; designating a period or circle of nineteen years.

DECENT, a. *dē'sĕnt* [F. *décent*—from L. *decens* or *decen'tem*, becoming: It. *decente*]: becoming in speech, behavior, dress, etc.; fit; comely; not gaudy; moderate; not large; respectable. DE'CENTLY, ad. *-lĭ*. DE'CENCY, n. *-sĕn-sĭ*, state or quality of being suitable or becoming in words or behavior; propriety; modesty. DE'CENTNESS, n. the state of being decent.—SYN. of 'decent': proper; becoming; seemly; suitable; just; right; modest; decorous; sufficient.

DECEPTIBLE, a. *dĕ-sĕp'tĭ-bl* [L. *deceptus*, ensnared, beguiled—from *de, captus,* taken, seized]: that may be deceived. DECEP'TIBIL'ITY, n. *-bĭl'ĭ-tĭ*, capability of being deceived. **Decep'tion**, n. *-sĕp'shŭn* [OF. *deception*—from L. *deceptiōnem*]: the act of misleading; state of being deceived; a cheat. **Decep'tive**, a. *-tiv*, tending to mislead or impress with false opinions. **Decep'tively**, ad. *-lĭ*. **Decep'tiveness**, n. tendency to deceive; the power or ability to deceive. **Deceptious**, a. *dĕ sĕp'shŭs*, in *OE.*, deceptive.

DECEP'TION ISLAND: near South Shetland, in the Antarctic Ocean. Under the reign of almost perpetual winter, it possesses hot springs and a volcano. In these contrasts it resembles Iceland with its Hecla and its geysers. But D. I. seems peculiar inthis, that its very material consists of alternate layers of ashes and ice. It contains a deep lake five m. in circuit.

DECERN, v. *dĕ-sėrn'* [F. *décerner*, to award—from L. *decernĕrĕ*, to decide—from *de*, *cernĕrĕ*, to judge: It. *decernere*]: in *Scots law*, to determine; to pass a decree; to judge. **Decern'ing**, imp. **Decerned'**, pp. *-sėrnd'*. **Decerniture**, n. *dĕ-sėrn'ĭ-tūr*, in *Scots law*, a decree or sentence of a court.

DECHENITE, n. *dek'ĕn-īt* [named after a German geologist, *Von Dechen*]: a red or yellow greasy mineral, occurring massive, botrioydal, nodular, stalactitic, and at times slighthly columnar. Hardness, 3–4; sp. gr. 5·6–5·8; composition: sesquioxide of vanadium, 16·81–49·27; protoxide of lead, 48·7–57·66; protoxide of zinc, 0–21·47. It is found in Germany.

DECHRISTIANIZE, v. *dĕ-krĭst'yăn-īz* [L. *de*, and *Christian*]: to turn from Christian belief and practice; to put away Christian belief and principle from. **Dechrist'iani'zing**, imp. **Dechrist'ianized**, pp. *-īzd*.

DECIDE, v. *dĕ-sīd'* [F. *décider*—from L. *decīdĕrĕ*, to cut off, to determine—from *de*, *cado*, I cut or strike: It. *decidere*—*lit.*, to strike or cut out the line to be followed]: to terminate or settle; to determine; to end; to fix the event of; to come to a conclusion; to form a definite opinion. **Deci'ding**, imp. **Deci'ded**, pp.: **Adj.** clear; that puts an end to doubts; unequivocal; resolute; determined. **Deci'dedly**, ad. *-lĭ*, in a determined manner; clearly; indisputably. **Deci'dable**, a. *-dă-bl*, that may be decided. **Deci'der**, n. one who.

DECIDENCE, n. *dĕs'ĭ-dĕns* [L. *decidens*, falling off—from *de*, *cado*, I fall]: the act of falling off; downfall.

DECIDUOUS, a. *dĕ-sĭd'ū-ŭs* [L. *decidŭŭs*, that falls down or off—from *de*, *cădo*, I fall]: liable to fall; not perennial or permanent; that falls in autumn; in *zool.*, applied to parts that fall off or are shed during life. **Decid'uousness**, n. the quality of falling once a year. **Deciduous Trees**, those which annually lose and renew their leaves. The greater part of the trees and shrubs of temperate regions are deciduous; but within the tropics, the forest retains always its luxuriance of foliage, except in countries where the diversities of condition, occasioned by the wet and dry seasons, are extreme, and there many trees lose their leaves in the dry season, from causes apparently the same with those which produce the same effect on the approach of winter in colder countries, and which are connected with a sort of rest of the plant, or partial suspension of the active functions of vegetable life. Trees not deciduous are called EVERGREEN (q.v.).

DECIGRAM, or DECIGRAMME, n. *dĕs'ĭ-grăm* [F. *décigramme*]: a weight of one-tenth of a gramme; 1·5432 grains avoirdupois.

DECILITER, n. *de-sĭl'ĭ-tėr* or *dĕs'ĭ-lī-tėr*, or DÉCILITRE, *dā-se-lē'tr* [F. *décilitre*]: French measure of capacity equal to the tenth part of a liter, or 0·176077 of a pint.

DECILLION, n. *dĕ-sĭl'yŭn* [L. *decem*, ten, and *million*]: a million raised to the tenth power; in British computation, a number consisting of 1 followed by 60 ciphers; in French and Italian, 1 followed by 33 ciphers.

DECIMAL, a. *dĕs'ĭmăl* [OF. *decimal*—from mid. L. *decĭmālis*—from L. *decĭmus*, tenth: It. *decima:* F. *décime*, or *dime*, the tenth part]: numbered by tens; increasing or diminishing by ten times: N. a tenth. DEC'IMALLY, ad. *-lĭ*, by means of decimals; by tens. DECIMAL NOTATION: see NOTATION. DECIMAL POINT, the separating point or dot placed between the decimal on the right and the whole number on the left, thus 324·75=$324\frac{3}{4}$.

DECIMAL FRACTIONS, *dĕs'ĭ-mal frăk'shŭnz:* those that have for their denominator any of the numbers 10, 100, 1,000, etc—i.e., any power of 10: see FRACTION. Thus, $\frac{7}{10}$, $\frac{23}{100}$, $\frac{19}{1000}$, are decimal fractions. In writing such fractions, the denominator is omitted, and the above stand thus: 0·7, or ·7, ·23, ·019. That these numbers do not express integers, is intimated by the point to the left; and the denominator is always 1, with as many ciphers annexed as there are figures in the decimal. A cipher is prefixed to 19, because otherwise it would read as if it stood for $\frac{19}{100}$. The expression 5·647 bushels is read, Five bushels and 647-thousandths of a bushel; or, Five bushels and six-tenths, four-hundredths, and seven-thousandths of a bushel. That these two readings are equivalent appears from this, that $\frac{647}{1000} = \frac{600}{1000} + \frac{40}{1000} + \frac{7}{1000} = \frac{6}{10} + \frac{4}{100} + \frac{7}{1000}$. It thus appears that the first figure of a decimal to the left expresses tenths of the unit; the second, hundredths; the third, thousandths, etc. In this property lies the great advantage of decimal fractions; they form merely a continuation of the system of notation for integers, and undergo the common operations of addition, multiplication, etc., exactly as integers do.

The disadvantage attending decimal fractions is, that comparatively few fractional quantities or remainders can be exactly expressed by them; in other words, the greater number of common fractions cannot be *reduced*, as it is called, to decimal fractions, without leaving a remainder. Common fractions, such as $\frac{1}{2}$, $\frac{2}{3}$, $\frac{1}{4}$, $\frac{3}{7}$, $\frac{9}{25}$, for instance, can be reduced to decimal fractions only by multiplying the numerator and denominator of each by such a number as will convert the denominator into 10, or 100, 1,000, etc.

(The common process is merely an abridgment of this.) But that is possible only when the denominator divides 10, or 100, etc., without remainder. Thus, of the above denominators, 2 is contained in 10, 5 times; 4 in 100, 25 times; and 25 in 100, 4 times; therefore, $\frac{1}{2} = \frac{1 \times 5}{2 \times 5} = \frac{5}{10} = \cdot5$; $\frac{1}{4} = \frac{1 \times 25}{4 \times 25} = \frac{25}{100} = \cdot25$; $\frac{9}{25} = \frac{9 \times 4}{25 \times 4} \frac{36}{100} = \cdot36$. But neither 3 nor 7 will divide 10 or any power of 10; and therefore these numbers cannot produce powers of 10 by multiplication. In such cases, we can only approximate to the value of the fraction. Thus, 10, 100, 1,000, etc., divided by 3, give 3, 33, 333, with a remainder in each case; and $\frac{2}{3} = \frac{2 \times 333}{3 \times 333} = \frac{666}{999}$. As this denominator is nearly equal to 1,000, $\frac{2}{3} = \frac{666}{1000}$ or ·666 nearly. As 10, and therefore its powers, are composed of the two factors, 2 and 5, it is obvious that any fraction whose denominator contains any other factor than these, cannot be reduced exactly to a decimal fraction.

DEC'IMAL SYS'TEM: any system of weights, measures, money, etc., in which the standard unit is divided into tenths, hundredths, etc., for the denominations below it, and multiplied by 10, 100, etc., for those above it. The nature of this method of division will be best explained by an example from the French metric system, where it has been most rigidly carried out. The *mètre* (= 39 37 English inches) is the unit of length, and the foundation of the whole system. For the higher denominations of length, the Greek words *déca, hecto, kilo,* and *myria,* are prefixed to signify *multiplying* by 10, 100, 1,000, 10,000; so that *décamètre* = 10 mètres, *kilomètre* = 1,000 mètres, etc. The Latin words *déci, centi, milli,* on the other hand, are used to express *division* by 10, 100, etc., and thus furnish names for the lower denominations; *décimètre* = $\frac{1}{10}$ of a mètre, *centimètre* = $\frac{1}{100}$ of a mètre, etc. Similarly with money; the *franc* being the unit, a *décime* is the tenth part of a franc; and a *centime,* the hundredth part.

Belgium and Switzerland have adopted both the French franc as the standard unit and the division into tenths. The Italian *lira* is the same as the franc. The decimal system in regard to money, with various units of reckoning, is now in use also in the United States, Germany, the Netherlands, Sweden, Russia, Austria, Spain, Portugal, Greece, Turkey, China, and Japan. The French metrical system of weights and measures has been introduced into Germany, Belgium, Switzerland, Spain, Portugal, etc.

This plan of decimal gradation in weights and measures is the only rational one, because it is in accordance with the universally adopted decimal notation. If thoroughly carried out, the facilities it would afford in every department of life would be very great. For one thing, it is not too much to say that one-half the time spent in learning arithmetic might be saved. That study might, in addition, be made an effective means of intellectual discipline, whereas at present the time must be spent in acquiring something like a ready but blind application of complicated rules.

The most striking instance, perhaps, of the inconvenience of the arbitrary mode of division is furnished by the thermometer. In this case, nature has fixed the fundamental measure, and made it the same for all nations—the interval, namely, between the freezing and boiling points of water. And yet, in England, this space is divided into 180 parts or degrees; in Germany and the continent generally, into 80°; and only in France has it been divided into 100°. Thus, the basis of uniformity made to our hand has been thrown away, and every observation of temperature made in one country has to be painfully translated before it can be understood in another. But for scientific purposes and in scientific subjects, the decimal scales have now largely superseded the popular ones. Even in England, the most conservative of civilized nations in this respect, the innovation is becoming established in chemistry, for example. In Germany, though Réaumur's scale is still the popular one, the centigrade is constantly used for all purposes. It has been proposed to apply the decimal scale to the division of degrees and of time. See METRE: GRAMME: LITER: FRANC: ARE: etc.: also THERMOMETER.

DECIMATE, v. *dĕs'i-māt* [L. *decimātus*, selected by lot every tenth man for punishment—from *decem*, ten: It. *decimare*: F. *décimer*]: to destroy a tenth part, as by disease; to punish with death every tenth man; to take a tenth part; to destroy any large portion. DEC'IMATING, imp. DEC'IMATED, pp. DEC'IMA'TION, n. *-mā'shŭn* [F.—L.]: a selection of every tenth by lot; destruction of any large portion: ancient form of military punishment: when a considerable body of troops committed some grave military offense, which would be punished with death if committed by an individual, the punishment was awarded to one-tenth of them by lot, instead of to the whole number, in order that the army might not be too much weakened. DEC'IMA'TOR, n. *-tėr*, one who.

DECIMETRE, n. *dĕs'ĭ-mā-tr* [F.]: a French measure of length, equal to the tenth part of a metre, or 3·9371 inches.

DECIMI, *dĕs'ĭ-mī*, in Music: interval of ten diatonic degrees, as from C to E, or third above the octave, as which it is always treated in harmony.

DECIMO-SEXTO, n. *dĕs'ĭ-mō sĕks'tō* [L. *decĭmus*, tenth; *sextus*, sixth]: a book made up of sixteen leaves to each sheet.

DECIPHER, v. *dĕ-sī'fėr* [F. *déchiffrer*, to decipher—from L. *de*, not: F. *chiffre*, a figure]: to read ciphers; to explain; to unfold; to unravel; to ascertain the meaning of anything obscure or difficult to be understood. DECI'PHERING, imp. DECI'PHERED, pp. *-fėrd*. DECI'PHERER, n. *-fėr-ėr*, one who. DECI'PHERABLE, a. *-fėr-ă-bl*, that may have its meaning ascertained. **DECI′PHERMENT**, n. *-fĕr-mĕnt*, the act of deciphering.

DECISION, n. *dĕ sizh′ŭn* [F. *décision*—from L. *decīsiōnem*—from *decīsus*, cut off, determined (see DECIDE)]: determination; final judgment or opinion; the end of a struggle; firmness and strength in character. **DECI′SIVE**, a. *-si siv*, final; conclusive; having the power to settle a contest or an event; decided; positive. **DECI′SIVELY**, ad. *li*. **DECI′SIVENESS**, n. the quality of ending doubt or controversy.—SYN. of 'decision': resolution; conclusion; settlement.

DECIUS, *dē′she-us*, CAIUS MESSIUS QUINTUS TRAJANUS: Roman emperor: reigned A.D. 249 to 251: born in Lower Pannonia. Being sent in 249 by Philippus, the ruling emperor, to restore to subordination the army of Mœsia, the troops proclaimed him emperor against his will, and forced him to march upon Italy. Philippus encountered the forces of D. near Verona, but was defeated and slain. D. assumed the government of the empire in the end of 249, but his brief reign was one of restless warring with the Goths, fighting against whom he was killed near Abricium, in the close of 251. During the reign of D., it was determined to revive the censorship, and to persecute the Christians, in order by the first to check the growing immorality of the state, and by the second to bring back the purity of the Roman religion, and regain for Rome the favor of the gods. The censorship was never fully restored, but a barbarous persecution of the Christians took place. In Rome, Antioch, and Jerusalem, the several bishops were massacred; Origen, famous among the early Fathers, was subjected to the most acute tortures; dreadful cruelties were perpetrated also at Alexandria. Many Christians, in Africa, disowned their religion, until the persecution had passed.

DECK, n. *dĕk* [old Dut. *decken*, to hide: Dut. *dekken*, to cover; *dek*, a cover, a ship's deck: O.H.G. *dekjan;* Icel. *thekja*, to cover, to roof: Ger. *dach*, roof: L. *tectus*, covered]: the planked flooring of a ship—large ships having several decks; a pack of cards piled regularly on each other: V. to adorn; to clothe or dress with great care; to furnish with a deck. **DECK′ING**, imp. **DECKED**, pp. *dĕkt*. **QUARTER-DECK**, that which is above the upper deck, and which reaches from the stern to the gangway. **DECK′ER**, n. a ship having decks; one who adorns. **DECK-BRIDGE**, one in which the track occupies the upper stringer, as distinguished from one in which the track, whether for cars or carriages, rests on the lower stringer. **DECK-LIGHT**, a bull's-eye or thick glass window set into an upper deck to light a cabin or stateroom. **TO CLEAR THE DECKS**, among *seamen*, to make everything clear for a naval battle by putting away all things that would prove hindrances. **TO SWEEP THE DECK**, in *card-playing*, to carry off all the stakes on the card-table.

DECK: nearly flat planked covering to a ship, forming a flooring to the persons above it, and a shelter to those below it. There may be several such in a ship, one under another; not only does each serve the purposes here named, but it helps to strengthen the vessel, by holding the sides together. In ships of war, the number of decks varies with the rate or size. First and second rates have four whole decks, stretching throughout from stern to stern. Smaller ships have two whole and one half decks; while a still smaller class have only one of each.

Where there are several decks in a ship, they are distinguished by different names. Thus, the *upper* or *spar* D., open to the sky, stretches from stern to bow, and is conventionally divided into *quarter-deck*, *waist*, and *forecastle.* The *main* or *gun* D. is immediately below the upper deck. The *middle* D. is next under the main D., and is rather thicker and stronger. The *lower* D. is in the broadest part of the ship, and in war ships is made very strong, to receive the heaviest guns. The *orlop* D. is the lowest of all, and is often only temporary; it is occupied chiefly as store-rooms. Some of the above are wanting in all but the largest ships; and other names are occasionally substituted. A *flush* D. is a continued floor from stern to stern, upon one range, without any break.

DECKANEE' HEMP: see HIBISCUS.

DECKER, *dĕk'ėr*, Sir MATTHEW, Bart: b. Amsterdam toward the close of the 17th c.; d. 1749, Mar. 18: political economist. He came to London 1702, was naturalized as an English subject in the following year, and having embarked in commerce, attained the greatest success; received a baronetcy in 1716, and three years afterward, took his seat in parliament as member for Bishop's Castle. He sat in the house only for four years.

D., in 1743, published a pamphlet, which in 12 years ran through seven editions, in which he proposed to raise all the public supplies from a single tax—upon houses. According to D.'s calculation, there were then in England, exclusive of Wales, 1,200,000 houses; of these he meant to tax only one-half, counting off 500,000 as inhabited by the working classes, and 100,000 as being uninhabited. By this means, he proposed to raise an annual revenue of £6,000,000, which sum was £1,000,000 more than the expenses of the government of that day required. The surplus was to be applied as a sinking fund for the purpose of discharging debt.

DECLAIM, v. *dĕ klām'* [F. *déclamer*—from L. *declamārĕ*, to declaim, to cry aloud—from *de*, *clamārĕ*, to cry out—*lit.*, to cry out loudly]: to harangue; to speak loudly and earnestly, with a view to convince, or to move the passions; to speak with force and zeal; to inveigh; to speak pompously or noisily. DECLAIM'ING, imp. DECLAIMED', pp. *-klāmd'*. DECLAIM'ER, n., and DECLAIM'ANT, n. one who. DECLAMATION, n. *dĕk'lă-mā'shŭn* [F.—L.]: a set or prepared speech; a harangue; in *schools* and *colleges*, a speech prepared and uttered by a student; a noisy address without solid sense or argument. DECLAMATORY, a. *dĕ-klăm'ă-tėr-ĭ*, pertaining to declamation, appealing to the passions; applied to noisy address; bombastic. DECLAMANDO, ad. *dĕ-kla-măn'dō* [It.]: in *music*, in a declamatory style.

DECLAMA'TION: art of speaking according to rules, whereby the sense of the words, as well as the feeling and sentiment, is naturally and characteristically represented. Recitation, therefore, whether spoken or sung, is subject to the laws of D., from which it derives its value and significance. Perfect D. implies correctness of speech, distinctness and clearness of enunciation, and a well-toned voice. D. is therefore clearly of a musical nature. In music, however, D. is so far different from the D. of speaking, that the singer must adhere to what the composer has written, as it is the latter who fixes the whole of the intonation, modulation, and phrasing, also the *tempi* and expression, and who frequently sacrifices the correctness of the D. to the charm of some peculiar melodic phrase or pleasing rhythm, or vocal musical embellishment. The truth and beauty of correct musical D. are always endangered by a translation of the original words into another language, since it is scarcely possible to fit syllable for syllable, accurately to the accent of the music. The master-works of many great composers suffer much in this respect. The ancients had a kind of note, or sign of intonation, which they placed over or under the words, possibly to decide whether the accent should be given by a high or by a low tone, and thus to regulate the modulation of the voice. That the theatrical D. of the ancients resembled the musical recitative of the present day, is generally admitted.

DECLARA'TION, in Common Law: pleading in which the plaintiff in an action sets forth his case against the defendant. The plaintiff might declare as soon as the defendant had made appearance in answer to the Writ of Summons (q.v.), or, where the summons was not specially indorsed (see INDORSEMENT), on failure of the defendant to make appearance. If the plaintiff failed to declare within a certain time, the defendant might obtain judgment of *Non Pros.;* and if the failure continued for a year after the writ of summons is returnable, the plaintiff was deemed out of court. On application to a judge, a plaintiff, if not prepared, might obtain time to declare; and a defective D. might be amended. In England, since the Judicature Act of 1875, the D. is no longer used in actions, and the *Statement of Claim* takes the place both of it and of the former BILL IN CHANCERY. In the United States some states have substituted a 'complaint' for the D.; others, mostly of the older states, hold to the common-law system of D., which generally obtains also in the United States courts.

DECLARA'TION, instead of oath, in Law: solemn affirmation by a witness who conscientiously objects to swearing to the truth of his testimony, as do members of the Society of Friends, and some others: see AFFIRMATION: OATH.

DECLARA'TION, DYING: declaration made by a person under the conviction of his impending death, and who does not survive the trial of one accused of causing his fatal injury; known usually as 'ante mortem declaration.' Such declarations are of peculiar value for the ends of justice, in the event of the death. They form an exception to the general rule that secondary or hearsay evidence is inadmissible.

In cases of murder, the dying D. of the sufferer as to the circumstances of the crime is always admitted as evidence on the trial of the prisoner, provided that it was deliberately emitted while the deceased was in possession of his faculties, and that it is proved by credible witnesses. If it be possible, the dying D. should always be committed to writing, and tested in the most complete manner consistent with the circumstances. In cases of necessity, however, it may be proved by parol evidence. As to the other cases in which secondary or hearsay evidence is admissible, see EVIDENCE.

DECLARATION IN CRIMINAL PROCEEDINGS, in Scottish Law: statement made by the prisoner before the magistrate: see STATEMENT.

DECLARATION OF INDEPENDENCE, MECKLENBURGH: see MECKLENBURGH DECLARATION, ETC.

DECLARATION OF INDEPENDENCE OF THE UNITED STATES OF AMERICA: adopted in the colonial congress 1776, July 4, and subsequently ratified by each of the colonies. It is not probable that at the beginning of the struggle with Great Britain any considerable number of Americans regarded the independence of the colonies as an ultimate result. True, the people of N. C. in their Mecklenburgh convention, 1775, May 20, declared themselves for ever free of all allegiance to the British crown; but that this action did not meet with favor elsewhere is shown by the facts, that Washington abhorred the idea even after assuming command of the army, that it was emphatically disavowed by congress 1775, July 6, and that prior to 1776, Jan. several colonies formally instructed their delegates in congress to oppose any separatist proposition. The battle of Bunker Hill did much to advance the idea of independence in the New England colonies, and the transfer of the war to the south in 1776, May and June, quickened its popularity in that section. The first step in the great movement was taken by Mass. in 1776, Jan., when her delegates in congress were specially charged to vote for independence. S. C. followed in Mar., Ga. and N. C. in Apr., Va. in May, N. H., N. J., and Md. in June, while N. Y. and Penn., still trusting in the possibility of reconciliation left their delegates uninstructed. The second step was taken by Va. 1776, May, when her delegates were instructed to propose a resolution declaratory of independence, which was done by Richard Henry Lee, June 7, who moved that 'these united colonies are, and of right ought to be, free and independent states, . . . and that a plan of confederation be prepared and transmitted to the respective colonies for their consideration and approbation.' Lee's resolution was debated in committee of the whole June 8 and 10, and adopted June 11. Under it one committee was appointed to prepare a D. of I., consisting of Thomas Jefferson of Va., John Adams of Mass., Benjamin Franklin of Penn., Roger Sherman of Conn., and Robert R. Livingston of N. Y., and another to prepare articles of confederation. The committee on declaration reported a document in the handwriting of its chairman, Thomas Jefferson, June 28; the report was taken up July 1 and debated till the evening of the 4th, when it was adopted without opposition, the N. Y. delegation, though favoring it, refusing to vote from want of instructions. Copies of the declaration were sent to all the colonies, and each ratified it in special convention; N. Y. accepting it July 9, though her delegates did not sign it till the 15th, and N. H. delaying the final signature till Nov. 4. The D. of I. was adopted in the second continental congress, held in the old Penn. state house, Philadelphia, by virtue of a recommendation of the first congress that a second should be convened 1775, May 10.

DECLARATION OF PARIS, concerning Maritime Law in time of war: see International Law.

DECLARATION OF RIGHTS: see Rights.

DECLARE, v. *dĕ-klār* [F. *déclarer*—from L. *declarārĕ*, to make evident—from *de*, in the sense of 'fully;' *clarus*, clear—*lit.*, to make quite clear]: to make known; to tell explicitly and plainly; to assert or affirm; to decide in favor of or against: to make one's opinions, line of conduct, or party known. Decla'ring, imp. Decla'rable, a. *-rā-bl*, capable of being declared. Declared', pp. *-klārd'*. Decla'rer, n. *-rėr*, one who. Decla'redly, *-rĕd-lĭ*. Declaration, n. *dĕk'lă-rā'shŭn* [F.—L.]: an open expression of facts, opinions, etc.; a statement given verbally, or reduced to writing; proclamation. Declarative, a. *dĕ-klăr'ă-tĭv*, explanatory. Declarator, *dĕ-clăr'ă-tėr* [L. *declārātor*, one who declares or makes known]: in *Scots law*, a form of action in the court of session, to assert some right or interest; a form that seems infelicitous and needless, inasmuch as all actions at law are actions of declarator. Declaratory, a. *dĕ-klăr'ă-tėr-ĭ*, making clear or manifest. Declar'atorily, ad. *-lĭ*.—Syn. of 'declare': to announce; proclaim; publish; assert; affirm; avow.

DECLENSION, n. *dĕ-klĕn'shŭn* [L. *declĭnātĭōnem*, a turning aside, a departure: F. *déclinaison* (see Decline)]: a falling or declining toward a worse state; decay; in *gram.*, the variation or change in the termination of a noun, an adjective, or a pronoun, to form its cases.

DECLEN'SION, in Grammar: modification, or the system of modification, of the terminations of nouns, pronouns, and adjectives in many languages, to show what is called the *case*. How the words Declension [Lat. *declinatio*, a declining, or leaning away] and Case [Lat. *casus*, a fall] came to be applied to this species of inflection, has never been made clear. The relations in which one thing stands to other things may be expressed in either of two ways. Some languages make use of separate words, called prepositions; in others, the relations are expressed by changes in the termination of the name of the thing. Thus, in Latin, *reg* being the root or crude form of the word for 'king,' *regs*, or *rex*, is the word in the nominative case, signifying 'a king' as subject or agent; *regis*, in the genitive case, 'of a king;' *regi*, in the dative, 'to a king,' etc. An adjective joined to a noun, usually takes a corresponding change. The number of the cases is very different in different languages. The further we go back in the history of the Indo-European languages, the richer do we find them in these modifications. Sanskrit had eight cases, Latin six, and Greek five. The names of the Latin cases, often used in regard to the English language also, are—the Nominative, which names the subject or actor; the Genitive, expressing the source whence something proceeds, or to which it belongs; the Dative, that to which something is given, or for which it is done; the Accusative, the object toward which an action is directed; the Vocative, the person addressed or called; and the Ablative, that from which something is taken. The Greek has no Ablative case. The Sanskrit,in addition to the Latin cases, has an Instrumental case, and a Locative case. The grammar of the inflecting languages is complicated by the circumstance, that all nouns do not form their cases in the same way. This makes it necessary to distribute nouns into various classes, called 'declensions.' In Latin, as many as five declensions are usually given: see INFLECTION. As we descend the stream of time, the case-endings become rubbed off, as it were, and prepositions are used in their stead. The languages descended from the Latin (French, Italian, etc.) have lost all the cases of nouns and adjectives. The Gothic languages, of which Anglo-Saxon is one, had cases almost as numerous and perplexing as those of the Latin. German is still to a great extent encumbered with them. English has in nouns only one case different from the nominative—namely, the genitive, or possessive: see NOUN. The declension of Pronouns (q.v.) has been more persistent than that of nouns and adjectives. Languages of the agglutinating order have, in general, a great abundance of cases. In Finnish, nouns have 15 cases. Thus, *karhu*, a bear; *karhun*, of a bear; *karhuna*, as a bear; *karhutta*, without bear; *karhussa*, in the bear; *karhusta*, out of the bear, etc. In the Magyar, 20 cases may be reckoned; and the languages of the N. American Indians are richer still—perhaps we should say, more embarrassed. For the origin of case endings and other inflectional terminations, and for the comparative merits of the highly inflected and the analytic languages, see INFLECTION.

DECLIEUXIA, n. *dă-klĭ-uks'ĭ-a* [named after M. *Declieux*, a French gardener]: genus of plants belonging to the order *Cinchonaceæ*, and consisting chiefly of shrubs, rarely herbs.

DECLINA'TION, in Astronomy: variation from a fixed line or point. If a great circle be drawn through the pole of the heavens and any star, then the D. of the star is the portion of the circle intercepted between the star and the equator, or the angular distance of the star from the equinoctial: see POLE. The place of a point in the heavens is determined by its right ascension and D., just as a point in the earth's surface is determined by its latitude and longitude.

DECLINATION NEEDLE, or DECLINOM'ETER: instrument for determining the magnetic declination of the needle of a compass. When a magnetic needle is suspended or made to rest on a point so as to be free to move in a horizontal plane, it finds its position of rest in a line joining two fixed points on the horizon; and when made to leave that position, after several oscillations, it returns to it again. At certain places on the earth's surface, these two points are the n. and s. points of the horizon; but in most places, though near, they do not coincide with these. A vertical plane passing though the points on the horizon

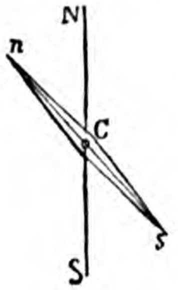


Fig. 1.

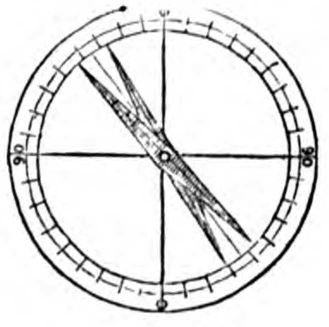


Fig. 2.

indicated by the needle, is called the magnetic meridian, in the same way that a similar plane, passing through the n. and s. points, is known as the astronomical meridian of the place. The angle between the magnetic and astronomical meridians is termed the declination or variation of the needle. Thus, if NS (Fig 1) be the line of the astronomical meridian, and *ns* the line joining the poles of the needle, the angle NC*n* is the declination. The declination is e. or w. according as the magnetic north lies e. or w. of

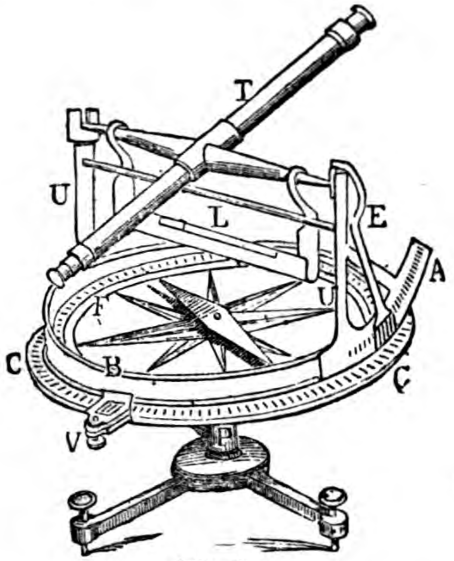


Fig. 3

the true north. In the instrument for measuring the magnetic declination of the needle, there are two things essential—the means of ascertaining the astronomical meridian, and a needle for showing the magnetic meridian. Fig. 3 represents a common form of the declinometer. Upon a tripod provided with levelling screws stands the pillar P, to which is fixed the graduated azimuthal circle CC. The compass-box B, with the vernier V, attached to it, moves on the azimuthal circle by means of a pivot at the pillar P. Two uprights, U, U, are fixed to the side of the compass-box, on the tops of which rests the axis of the telescope T. A graduated arc A, is fixed to the bottom of one of the uprights, and the angle of elevation of the telescope is marked by the vernier on the arm E, attached to the axis of the telescope. A level L, is also hung on the axis of the telescope, for adjusting the instrument. Inside the compass-box is another graduated circle F, the line joining the zero-points of which is parallel to the axis of the telescope. All the fittings are in brass or copper, iron, of course, being unsuitable. It will be easily seen that the compass-box and telescope move round as one piece on an axis passing through the centre of the azimuthal circle. When an observation is made, the telescope is pointed to a star whose position with regard to the astronomical meridian is known at the time of observation. The telescope with the compass-box is then brought the proper number of degrees on the azimuthal circle, until its axis is in the meridian of the place. If, when the telescope is in this position, the n. end of the needle stand at the zero point of the inner circle, the declination would be 0°; but if it stand e. or w. of this point, the declination is shown by the degree at which the needle stands. It is difficult to construct a needle so that the line joining its poles exactly coincides with the line joining its visible extremities. If this coincidence be not perfect, the geometrical axis of the needle according to which the reading is made lies to the right or left of the magnetic axis, and consequently of the true reading. To remedy this, the needle is so made that it can rest either on its lower or upper surface. In finding the true reading, the position of the needle is marked, and then it is turned upside down, and again marked, the mean of the two readings giving the true one. This is seen in fig. 2. The declination of the needle may be ascertained also by the 'Dipping Needle' (q.v.). The ordinary compass which must be used by making allowance for declination, is a declination compass. See MAGNETISM.

DECLINE, v. *dĕ-klīn'* [F. *décliner*—from L. *declīnārĕ*, to turn aside, to inflect—from *de, clino*, I lean: It. *declinare*]: to lean from a right line; to refuse; to shun; to avoid; not to comply; to decay; to droop; to tend to a less perfect state; to sink; to diminish; to fall in value; in *gram.*, to vary or change the termination of a noun, an adjective, or a pronoun; to infléct: N. tendency to a worse state; decay; a falling off; deterioration; consumption. DECLI'NING, imp. ADJ. that takes a downward course; decaying. DECLINED', pp. *klīnd'*. DECLI'NABLE, a. *-nă-bl*, in *gram.*, capable of being declined. DECLIN'ATORY, a. *-klĭn'ă-tėr-ĭ*, in *law*, claiming exemption from punishment. DECLIN'ATURE, n. *-ă-tūr*, the act of declining or refusing; in *Scotch law*, preliminary plea declining the jurisdiction of the judge, on the ground of his personal interest in the suit, or of the case being beyond his province. Declination, n. *dĕk′lĭ nā′shŭn*, deviation; falling to a worse state or condition; in *astron.*, a variation from a fixed line or point. Dec′lina′tor, n. an instrument used in astronomy and dialling. Declinometer, n. *dĕk′lĭ-nŏm′ĕ-ter* [Gr. *metron*, a measure]: an instrument for measuring the declination of the magnetic needle: see Declination Needle. Dec′linate, a. *-nāt*, in *bot.*, directed downward from its base. Declination of the needle of a compass, the variation of the needle from the true meridian of a place.

DECLIVITY, n. *dĕ-klĭv′ĭ-tĭ* [F. *déclivité*—from mid. L. *declīvĭtātem*, a sloping place—from *de*, *clīvus*, a slope]: inclination, or sloping downward; a slope; gradual descent—opposite of *acclivity*. Declivous, a. *dĕ-klī′vŭs*, descending gradually; sloping.

DECOCT, v. *dĕ-kŏkt′* [L. *decoctus*, a boiling down—from *de*, *coctus*, boiled or baked: It. *decotto;* F. *décocte*, a decoction]: to boil down; to prepare by boiling; to extract by boiling. Decoc′ting, imp. Decoc′ted, pp. Decoc′tible, a. *-tĭ-bl.* Decoc′tion, n. *-shŭn* [F.—L.]: the extraction of the virtues of any substance by boiling it in water; an extract. Decoc′tive, a. *-tĭv*, that may be decocted. Decoc′ture, n. *-tūr*, an extract obtained from a body by boiling it in water.

DECODON, n. *dĕk′o-dŏn* [Gr. *deka*, ten; *odous, odontos*, a tooth: so called because the calyx has ten teeth]: genus of *Lythraceæ*. *D. verticillata*, the Swamp Loose strife, is a native of the United States. It has been used as an emmenagogue.

DECOLLATE, v. *dĕ kŏl′lāt* [L. *decollātus*, beheaded—from *de*, *collum*, the neck]: to sever the neck; to behead. Decol′lating, imp. *-lā-tĭng.* Decol′lated, pp. *-lā-tĕd:* Adj. taken off by the neck; in *zool.*, applied to univalve shells whose apex falls off in the course of growth. Decollation, *dĕk′ŏl lā′shŭn* [F.—from mid. L.]: the act of beheading; state of one beheaded.

DÉCOLLETÉ, a. *dā-kol-le tā′* [F. *décolleter*, to uncover the neck and shoulders—from *dé*, *collet*, collar—from L. *collum*, neck]: leaving the neck and shoulders bare; low-necked.

DECOLOR, v. *dĕ kŭl′ėr* [L. *de*, down or from, and *color*]: to deprive of color; to bleach. Decol′oring, imp. Decol′ored, pp. *-ėrd.* Decol′orant, n. *-ėr-ănt*, a substance which removes color. Decol′ora′tion, n. *-ā′shŭn*, the loss or absence of color. Decol′orize, v. *-ėr-īz*, to deprive of color. Decol′ori′zing, imp. Decol′orized, pp. *-īzd.* Decoloring-style, or Discharge-style, a method of calico-printing: see Calico.

DECOLORIMETER, *dē-kŭl-ėr-ĭm′ĕt-ėr:* instrument for determining the power of portions of bone-black or animal charcoal to abstract coloring matter: see Bone-black.

DECOMPOSE, v. ***dē′cŏm-pōz′*** **[L.** ***de*****, from, and** ***compose:***

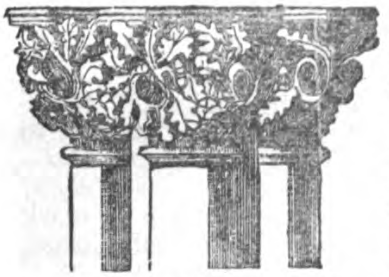
F. *décomposer*]: to separate the constituent parts of a body; to rot or decay; to resolve into original elements. DE′COMPO′SING, imp. DE′COMPOSED, pp. *-pŏzd.* DE′COMPO′SABLE, a. *-ză-bl,* capable of being resolved into original elements. DECOM′POSI′TION, n. *-pō-zĭsh′ŭn* [F.—L.]: the act of reducing a body into its original elements; putrescence; decay; analysis; in *chemistry,* separation of more simple substances from a compound. Thus, when the red oxide of mercury (HgO) is heated, it suffers decomposition, and is resolved into mercury (Hg) and oxygen (O); and water (HO), when subjected to a current of voltaic electricity, is decomposed into hydrogen (H) and oxygen (O). DECOM′POSITE, a. *-pŏz-ĭt,* compounded a second time; having a compound base or radical: N. anything decompounded.

DECOMPOSITION OF FORCES: see COMPOSITION.

DECOMPOUND, v. *dē′kŏm-pownd′* [L. *de,* and *compound*]: to compound a second time; to compose of things already compounded: ADJ. in *bot.*, applied to a leaf cut into numerous compound divisions. DE′COMPOUN′DABLE, a. *-dă-bl,* capable of being decompounded.

DECORATE, v. *dĕk′ō-rāt* [L. *decorātus,* adorned: It. *decorare:* F. *décorer*]: to beautify; to adorn; to ornament; to embellish. DEC′ORATING, imp. DEC′ORATED, pp. DEC′ORA′TOR, n. *-tĕr,* one who. DECORATION, n. *dĕk′ō-rā′shŭn,* [F.—L.]: ornament; embellishment; the emblem or mark of an order of knighthood or of merit, as a medal, ribbon, or star; anything added which pleases. DEC′ORA′TIVE, a. *-tĭv,* adorning.

DEC′ORATED STYLE of Gothic Architecture: prevalent in various countries in Europe for a period variously estimated at abt. 85–190 years. During the reigns of the three first Edwards, from the latter part of the 13th till nearly the end of the 14th c., Gothic architecture may be said to have been in full bloom in England. It attained perfection somewhat earlier in France and Germany, and somewhat later in Scotland; consequently the buildings on the continent which correspond to what is called the D. S. in England, belong mostly to the beginning, and those in Scotland to the end of the 14th c. The decorated style arose so gradually out of the style which preceded, and merged so gradually into that which followed, that different periods of duration have been assigned to it by different writers. The longest, probably, is that mentioned by Britton, 1272–1461; the shortest by Rickman, 1307–92. In fixing on the middle of the 14th c. as its highest point, however, all are nearly agreed, and the same agreement is shown in recognizing it as the most perfect of the Gothic styles. The decorated was a higher development of the early English style, all the peculiarities of which, both in forms and in adornments, it exhibited in greater perfection and richness; and it is remarkable that in the more elaborately florid style which succeeded it, the degeneracy in sculpture is as perceptible as in architecture. It seems, indeed, that the school of art which we regard as the peculiar production of the middle age, then attained, in all its branches, to a point which admitted no farther progress in that direction. Nor is this remark confined to art, as addressed to the eye; it may be admitted to apply to poetry also for the era above assigned to the decorated style throws it almost entirely within the period of the long life of Chaucer. It is an instance, moreover, of the intimate relation between the æsthetic and the general life of a nation, that it was at the same period that the social, political, and religious institutions of mediæval life culminated. Chivalry and feudality were in the fulness of their vigor, and the church had only begun to give employment to the innovating minds of the first reformers. Of all the epithets which have been employed to characterzie this style—absolute Gothic, pure Gothic, complete Gothic, and the like—that of the 'middle pointed,' seems most descriptive; the simple pointed arch, described from an equilateral or obtuse-angled triangle, being retained, but the window being enlarged, divided by mullions into several lights, and the heads filled with tracery. Of this, as of all the other styles of architecture, the most characteristic feature is unquestionably the capitals of the pillars. Of the foliage employed in the decorated capital, Mr. Bloxam remarks, that it 'may generally be distinguished from that of the early English by its not rising from the neck molding with stiff stems, but being carried round the bell in something of a wreath-like form. . . . It often exhibits much of natural freedom; and we frequently find the oak, the ivy, the hazel, the vine, the fern, etc., very beautifully and closely copied from the natural leaves.'



Decorated English Capital:
York Cathedral.

DECORATION DAY: May 30; day of annual commemoration of the fallen soldiers and sailors who fought for the preservation of the Union in the war against secession. The observance is by processions to the graves of the fallen, which are decorated with flowers. Usually there are public meetings with prayer and an oration. In the southern states the slain Confederates are commemorated similarly, but at a date earlier in the season.

DECOROUS, a. *dĕ-kō′rŭs* [L. *decōrus*, fitting, seemly: It. *decoro;* L. *decōrum:* F. *décorum*, decency]: decent; becoming; suitable, as in speech or behavior. **DECO′ROUSLY**, ad. *-lĭ*. **DECO′RUM**, n. *-rŭm* [L.]: propriety of speech or behavior; decency. **DECO′ROUSNESS**, n propriety of behavior.—SYN. of 'decorum': seemliness; propriety; dignity.

DECORTICATE, v. *dĕ-kŏr′tĭ-kāt* [L. *decortĭcātus*, deprived of the bark—from *de*, *cortex* or *cortĭcem*, bark: F *décortiquer*]: to strip off bark from; to peel; to husk. **DECOR′TICATING**, imp. **DECOR′TICATED**, pp. **DE′CORTICA′-**

TION, n. *-kā'shŭn*, the act of stripping off the bark or husk. Decor'ticator, n. *-kā-tėr*, a process or machine for removing the hull from grain.

DECOUPLÉ, *dĕ-kôp-lā'*, or Uncoupled, *ŭn-kŭp'ld*, in Heraldry: severed or disjoined, so that the ends stand at a distance from one another, as a *chevron decouplé*.

DECOY, v. *dĕ-koy'* [properly *duck-coy:* Dut. *koye*, a place in which a flock is penned; *kooi*, a cabin, a cage]: to entrap by any means which may deceive; to lure into a net or snare; to entice: N. anything intended to lead into a snare; anything that may lead into evil, danger, or the power of an enemy; a place for catching wild fowls. Decoy'ing, imp. Decoyed', pp. *-koyd'*. Decoy-duck, a duck employed to lure wild ducks into a decoy; any person employed to lure into danger or the power of an enemy.

DECOY'ING OF CHIL'DREN: included under the crime of stealing human creatures, the *plagium* of the Roman law and of the law of Scotland; severely punished by the legislation of every civilized country. In countries where slavery does not exist, the theft of a human adult is a crime which can scarcely occur. When a free man is wrongously captured or detained, the crime is not theft, but wrongous imprisonment, which will be dealt with by the criminal law as an injury to the public, while at the same time the individual will be entitled to recover damages for the injury which he has personally sustained. Formerly, it was regarded as treason to the king, inasmuch as it was a wrongful detaining of his free liegeman without his license or commission, and as such was punishable with death, both in England and in Scotland (Hume's *Com.* i. p. 83). The only form in which the crime has been dealt with in modern times is that of child-stealing, for which severe penalty is provided by statute,

DECREASE, v. *dĕ-krēs'* [OF. *decrois*, an abatement, a decrease—from L. *decrescĕrĕ*, to grow less—from *de*, *crescĕrĕ*, to grow: It. *decrescere*]: to grow less: to diminish gradually; to become less; to make less; to lower; to abate: N. a becoming less; decay; gradual diminution. Decreas'ing, imp. Decreased', pp. *-krēst'*. Decreas'ingly, ad. *-lĭ*. Decrescent, a. *dĕ-krĕs'sĕnt*. becoming gradually less. Decrescence, n. *dĕ-krĕs'sĕns*, the state of becoming gradually less.

DECREATION, n. *dē'krē-ā'shŭn* [L. *de*, down, and *creation*]: the undoing of an act of creation.

DECREE, n. *dĕ-krē'* [F. *décret*—from L. *decrētum*, a decree—from *de*, *crētus*, judged: It. *decreto*]: an order or law of an absolute sovereign; an edict or law made by a superior authority; the decision or order of a court; in the *Calvinistic system of theology*, the pre-determined purpose of God (see Predestination): V. to determine judicially; to fix or appoint; to constitute by edict. Decree'ing, imp. Decreed', pp. *-krēd'*. Decre'er, n. *-krē'ėr*, one who. Decreet, n. *dĕ-krēt*, or Decree, n. *dĕk'rē*, in *Scot.*, a decision or final judgment in a court of law: *decree* in England usually applies to the final judgment of a court of equity. Decre'tal,

a. *-krē'tăl*, containing a decree; pertaining to a decree: N. a decree or edict of the pope; a book or code containing decrees of the popes or councils pertaining to one subject: see DECRETALS. DECRE'TIST, n. *-tĭst*, one skilled in the knowledge of the decretals. DECRE'TIVE, a. *-tĭv*, having the force of a decree. DECRETORY, a. *dĕk'rĕ-tér'ĭ*, judicial; established by a decree. DECREE IN ABSENCE, in *Scotch law*, equivalent to a judgment by default, or to a decree *pro confesso*. DECREE NISI [L. *nisi*, unless]: the first judgment of a superior court, the second being final or absolute *unless* an appeal be made within a limited time: see NISI PRIUS.—SYN. of 'decree, n.': proclamation; law; statute; regulation; rule.

DECREMENT, n. *dĕk'rĕ-mĕnt* [L. *decrēmen'tum*, decrease—from *de*, *cresco*, I grow]: decrease; waste. *Decrement*, *Decrescent*, and *Decours*, heraldic terms for the wane of the moon: a *moon decrescent* is a half-moon with horns turned to the sinister.

DECREPIT, a. *dĕ-krĕp'ĭt* [F. *décrépit*—from L. *decrepĭtus*, very old—from *de*, *crepĭtus*, rattled, creaked: It. *decrepito—lit*, unable to make a noise by voice or foot-step]: broken down by the infirmities of age; crippled and enfeebled by age. DECREP'ITUDE, n. *-ĭ-tūd* [F.—L.], or DECREP'ITNESS, n. the feeble state of the body produced by the infirmities of age.

DECREPITATE, v. *dĕ-krĕp'ĭ-tāt* [L. *de*, *crepĭtātus*, rattled much, crackled: It. *decrepitare*, to roast salt or other matter till it has ceased to crackle]: to roast or calcine in the fire so as to cause a bursting or crackling noise, as salt; to crackle. DECREP'ITATING, imp. DECREP'ITATED, pp. DECREP'ITA'TION, n. *-tā'shŭn* [F.—L.]: the act of roasting with a continuous crackling noise; the splitting up of crystals on heating, caused by the expansion of the contained moisture; thus when common salt is thrown on a fire, a series of minute explosions occur, due to the water between the plates of the crystalline particles becoming expanded by heat, and ultimately bursting them.

DECRESCENDO, *dē-krĕs-sĕn'do*, in Music: reverse of crescendo; gradual diminishing of the sound. The executing of the D. is difficult, whether on one or more notes. Like the crescendo, it is also frequently combined with a slight ritardando, especially in descending passages. It is frequently marked thus >.

DECRESCENT: see DECREASE: DECREMENT.

DECRETAL, DECRETIVE, DECRETORY, etc.: see under DECREE.

DECRE'TALS: responses by the popes to applications addressed to them as head of the church; the chief source of the canon law. The canon law mostly consists, 1st, of the Decretalium, a collection made by Gratian, Benedictine monk, after the middle of the 12th c., in imitation of the Roman Pandects, and drawn from the opinions of the Fathers, popes, and church-councils; 2d, of the Decretalia, collected by Pope Gregory IX., nearly a century later, from the decretal rescripts or epistles of the popes, as the code of Justinian was from the constitutions of the emperors. To these, additions were made by several succeeding popes: see CANON LAW.

FALSE DECRETALS: famous literary forgeries, spurious papal letters, canons, etc., with a few possibly genuine. They appeared first in the middle of the 9th c.; and were received as true, till their genuineness was questioned by Cardinal Nicolas de Cusa, 15th c. The proof of their spuriousness is now regarded as clear.

DECRIAL, DECRIER: see under DECRY.

DECROWN, v. *dĕ-krown'* [L. *de*, down, and *crown*]: to deprive of a crown; to discrown.

DECRY, v. *dĕ-krī'* [F. *décrier;* OF. *descrier*, to cry down—from OF. *des* for L. *dis*, the opposite of, and *crier*, to cry (see CRY)]: to cry down; to censure; to clamor against. DECRY'ING, imp. DECRIED', pp. *-krīd'*. DECRI'AL, n. *-krī'ăl*, a clamorous censure. DECRI'ER, n. one who.—SYN. of 'decry': to depreciate; detract; disparage; discredit.

DECUMBENT, a. *dĕ-kŭm'bĕnt* [L. *decumbens* or *decumben'tem*, lying down—from *de, cubo* or *cumbo*, I lie]: declined or bending down; in *bot.*, lying flat along the ground, but rising from it near the extremity. DECUM'BENCE, n. *-bĕns*, or DECUM'BENCY, n. *-bĕn-sĭ*, the act or posture of lying down. DECUM'BENTLY, ad. *-lĭ*. DECUM'BITURE, n. *-bĭ-tūr*, confinement to a sick-bed; a term used by astrologers to indicate the state of the heavens, by which they pretend to foretell the death or recovery of a sick person.

DECUPLE, n. *dĕk'ū-pl* [F. *décuple*—from L. *decŭplus*, ten times as much—from *decem*, ten; *plico*, I fold: Gr. *dekăplous*]: a number ten times repeated: ADJ. tenfold: V. to make tenfold. DEC'UPLING, imp. *-ū-plĭng*. DEC'UPLED, pp. *-ū-pld*.

DECURION, n. *dĕ-kū'rĭ-ŏn*, or DECURIO [L. *decurĭōnem*]: in the *anc. Roman army*, cavalry-officer who commanded ten soldiers. DECURIONES MUNICIPALES, Roman provincial magistrates in free and corporate towns: at first 10 in number, they were in later times much more numerous.

DECURRENT, a. *dĕ-kŭr'rĕnt* [L. *decurren'tem*, running down—from *de, currens*, running]: running or extending downward; in *bot.*, attached along the side of a stem below the point of insertion, as the leaves of the thistle. DECUR'RENTLY, ad. *-lĭ*.

DECUSSATE, a. *dĕ-kŭs'sāt* [L. *decussātus*, divided crosswise, as in the form of an X—from *decussis*, the intersection of two lines in the form of a cross: It. *decusse*, the letter X]: in *bot.*, crossing each other in pairs at right angles, as opposite leaves: V. to intersect; to cause to cross, as lines, rays, etc. DECUS'SATING, imp. DECUS'SATED, pp. DECUSSATION, n. *dĕk'ŭs-sā'shŭn*, the act of crossing in the form of an X; in *anatomy*, the crossing of nerve filaments from one side of the body to the other, whence disease of the brain on one side may often induce paralysis on the other side of the body. DECUS'SATIVE, a. *-să tĭv*, formed as a cross. DECUS'SATIVELY, ad. *-lĭ*.

DEDALOUS, or DEDALIAN: see DÆDALIAN.

DEDENTITION, n. *dē'dĕn-tĭsh'ŭn* [L. *de*, and *dentition*]: the shedding of teeth.

DEDHAM, *dĕd'am:* town, cap. Norfolk co., Mass.; on Charles river and branches of the Boston and Providence and New York and New England railroads; 10 m. s.w. of Boston. Many Boston business men have elegant residences here. The public buildings include a county court-house of granite with two Doric porticoes, jail, house of correction, public library, and town-hall; educational, a high-school, and several parochial and public schools; charitable, a home for fallen women receiving state and private aid, and an institution under the Rom. Cath. Sisters of Charity. There are 5 churches, a national and a savings bank, and 2 weekly newspapers; the industries comprise the manufacture of pianos, brooms, woolen goods, cabinet ware, and carpets, and there are also 2 foundries, 2 tanneries, and a rolling-mill. Pop. (1870) 7,342; (1880) 6,233.

DEDICATE, v. *dĕd'ĭ-kāt* [L. *dedicātus*, dedicated, disposed—from *de*, *dĭcātus*, dedicated, devoted: It. *dedicare:* F. *dédier*]: to set apart solemnly for any particular purpose, as for the service of God; to devote to a sacred use; to inscribe or address to, as a book. DED'ICATING, imp. DED'ICATED, pp. DED'ICA'TOR, n. *-tėr*, one who. DED'ICA'TION, n. *-kā'shŭn*, the act of setting aside for any particular purpose; an address to a patron or a friend prefixed to a book: anciently very common, probably for winning the favor of the great; happily not now in vogue except in token of affection. DED'ICA'TORY, a. *-tėr-ĭ*, composing or constituting a dedication; complimental.—SYN. of 'dedicate': to devote; consecrate; addict; hallow; set apart; inscribe; address.

DEDOUBLEMENT, n. *dĕ-dŭb'l mĕnt* [L. *de*, down: Eng. *double*]: also DEDUPLICATION, n. *dē-dū'plĭ-kā'shŭn* [L. *de*, down; Eng. *duplication*]: the act of doubling down; in *bot.*, the separation of a layer from the inner side of a petal, either presenting a peculiar form, or resembling the part from which it is derived; chorisis—which see.

DEDUCE, v. *dĕ-dūs'* [L. *dedūcĕrĕ*, to lead or bring away—from *de*, *dūcĕrĕ*, to lead or bring: It. *deducere*]: to draw from in reasoning; to gather a truth or opinion from statements called premises; to infer something from what precedes. DEDU'CING, imp. DEDUCED', pp. *-dūst'*. DEDU'CIBLE, a. *-sĭ-bl*, that may be deduced. DEDU'CIBLENESS, n. DEDUCE'MENT, n. *-dūs'mĕnt*, the thing deduced; inference. DEDUCT, v. *dĕ-dŭkt'* [L. *deductus*, led or brought away—from *de*, *ductus*, led]: to subtract or take from. DEDUC'TING, imp. DEDUC'TED, pp. DEDUC'TION, n. *-dŭk'shŭn* [F.—L.]: the act of deducting; that which is deducted; subtraction; abatement; that which is drawn from principles or from a supposed cause by a process of reasoning; inference; consequence or conclusion. DEDUC'-

TIVE, a. *-tĭv*, that is or may be deduced from premises. DEDUC'TIVELY, ad. *-lĭ*.—SYN. of 'deduce': to derive; infer; trace; conclude; deduct; draw.

DEDUC'TION: particular kind of reasoning or inference. In ordinary language, to deduce means to trace one thing to another as its cause, to show that one proposition follows from some other proposition or propositions. In logic, its signification is more definite. It is usual to oppose Deduction to Induction (q.v.), and to say that the latter consists in reasoning from particulars to generals, the former in reasoning from generals to particulars. In fact, however, every step in a deduction is also an induction. The several steps of a train of deductive reasoning consist of Syllogisms (q.v.), and the major proposition of a syllogism is an induction, or a general proposition expressing the result of a previous induction. The whole object of this kind of reasoning is to show that some particular case or phenomenon really has the marks which bring it under the class to which the general proposition was meant to apply. Thus, the equality of the angles at the base of an isosceles triangle is deduced from the general proposition, 'That magnitudes which can be applied to one another so as to coincide are equal,' by showing that the angles in question can be so applied.

Deduction is opposed more properly to Experiment. Suppose the question to be as to the relation between the spaces and times in falling bodies, the point may be determined in two ways. We may institute experiments, and observe how far bodies *do* fall in different times, and conclude a general proposition from the particular instances observed; or we may bring the case under two general principles already established, those, namely, expressed in the first law of motion, and in the nature of gravity as a moving force, and calculate from these how far bodies *will* or *must* fall in given times. The conclusion or law arrived at in both cases is the same; but in the one case it is experimental, in the other deductive. It is the tendency of all sciences to become more and more deductive. Knowledge put on a deductive basis is sometimes spoken of as science, *par excellence*, and the immediate results of observation as empiricism. Mathematics is essentially a deductive science, and most of the truths in natural philosophy have been gradually put on similar grounds. Chemistry remains almost wholly experimental; it can predict or deduce little or nothing regarding an untried case, except, perhaps, the proportion in which two bodies will combine. See REASONING.

DEE: river in England, draining parts of the shires of Merioneth, Denbigh, Flint, and Salop, in Wales, and the west of Cheshire. Near Trevor, it is crossed by the Ellesmere Canal, on an acqueduct 1,007 ft. long and 120 high; also by the stone viaduct of the Chester and Shrewsbury railway, of 19 arches, each 90 ft. span and 150 ft. high. Below Trevor, the D. winds first s.e., and then n.e. and n. to Chester, which city it nearly encircles. At Chester, it is 100 yards broad, and runs alongside marshes in an artificial tidal canal 9 m. long, and admitting ships of 600 tons. It ends its course of 80 m. in the Irish Sea, in a tidal estuary 9 m. long, 3 to 6 m. broad, forming at high water a noble arm of the sea; but at low water a dreary waste of sand and ooze, with the river flowing through it in a narrow stream. Its chief tributaries are the Treveryn, Alwen, Ceirog, Clyweddog, and Alyn. Its upper basin consists chiefly of Silurian strata, and its lower of new red sandstone. Canals connect the D. with the rivers of central England. The ancient Britons held its waters sacred.

DEE, *dē:* river in Scotland; the larger of two of that name. It rises in five wells 4,000 ft above the sea, near the top of Braeriach Mountain, in the neighborhood of Cairntoul and Ben Macdhui, 25 m. n.w. of Castleton of Braemar. After flowing 12 m. s.s.e., it joins the Geauley, at the height of 1,294 ft. above the sea. It then tumbles through a narrow chasm in the gneiss rock, called the Linn of Dee, across which a person can leap. After this it flows e.n.e. through Aberdeenshire and a small part of Kincardineshire, and ends in the German Ocean at the harbor of Aberdeen. In this course, 96 m. in all, it receives a number of tributaries —the Lui, Muic, Feugh, etc. The basin of the Dee, about 1,000 sq. m., consists of granite and gneiss in nearly equal areas. In the gneiss occur many beds of primitive limestone, and some masses of trap-rock and serpentine. On the Dee are Balmoral Castle and several villages much resorted to in summer—Castleton of Braemar, Ballater, Aboyne, Kincardine O'Neil, Banchory-Ternan, and Cults. The soil on the Dee is light and sandy, and requires much rain. A railway extends up Deeside 43 m., from Aberdeen to Ballater. See BALMORAL: BRAEMAR.

DEE: river in Scotland; smaller of the two of that name. It rises in Kirkcudbrightshire, near the n boundary of that country. Its general direction for the first 40 m. is s.e., after which it flows w. to the Solway Firth, into which it falls at Kirkcudbright Bay. The D. near the centre of Kirkcudbright expands to about the average breadth of a quarter of a mile, continuing thus for about 10 m., and forming successively Loch Ken, Dee, and Long Loch. It is about 50 m. in length, navigable for the last 7 miles. The waters of the D. are noted for their salmon, which are of darker hue, and fatter than those of most rivers in the south of Scotland.

DEE, JOHN: astrologer and mathematician: 1527, July 13—1608; b. London; son of Rowland Dee, 'gentleman-sewer' to Henry VIII. He was educated at St. John's College, Cambridge. After residing for some time at the Univ. of Louvain, he went, 1550, to Paris, where, at the College of Rheims, he read lectures on the *Elements* of Euclid. In 1551, he returned to England, was presented by Cecil to Edward VI., and pensioned; but during the reign of 'Bloody Mary' he nearly lost his life. He again set out for the continent, 1564, ostensibly for the purpose of presenting to the emperor Maximilian a book which he had previously dedicated to him. Lilly, however, in his *Memoirs* (p. 224), affirms that he acted as Queen Elizabeth's 'intelligencer' or spy, and this theory is probably true. Lilly says that he was 'a ready-witted man, quick of apprehension . . . and excellent in all kinds of learning;' while the professional mask which he wore, the pretensions of being able to raise and converse with spirits, served to prevent suspicion.

The impression that Dee had dealings with the devil seems to have become more prevalent the longer he lived. In 1576, a mob assembled around Mortlake, his country residence, and, attacking the house, broke his instruments, and destroyed his library, which was large and costly, Dee and his family escaping with difficulty.

In the year 1581, having taken into his service an apothecary of the name of Kelly as assistant, Dee visited various continental courts, pretending to be able to raise spirits. Whether he took to this strange profession through a sincere belief in what he professed, or adopted it merely as a blind, a pretext for visiting foreign courts at which he had more serious business to transact, it is impossible to say. In 1595, he was appointed warden of Manchester College, where he resided nine years, and whence he returned to Mortlake. He died very poor. Dee's writings are very numerous; they are chiefly scientific treatises, and many of them are still in manuscript in the Cottonian and other collections, In 1842, the Cambridge Soc. published the Private Diary of Dr. John Dee, with a catalogue of his library of scientific MSS. made by himself.

DEED, n. *dēd* [AS. *dæd;* Goth. *ded;* Ger. *that*, a thing done: Dut. *daad;* Icel. *dath*, a deed]: anything done; an action; an exploit; power of doing; a writing containing some contract or agreement, especially regarding the sale of real property. DEED'LESS, a. without action or exploits. IN DEED, in fact. IN VERY DEED, in very fact; in reality.

DEED, in Law: formal written expression of something done by the party or parties from whom it proceeds; including almost every form of legal writing: see INDENTURE: CHARTER: WILL: DISPOSITION. As to the manner in which deeds are executed, see SIGNING, SEALING, AND DELIVERY: for Scotland, see TESTING CLAUSE: WITNESS: HOLOGRAPH: REGISTRATION OF DEEDS AND WRITS.

DEEM, v. *dēm* [AS. *dom*, judgment—from *deman*, to form a judgment: Lith. *duma*, mind, thought: Dut. *doemen*, to doom: Icel. *dœma*, to honor, to judge]: to be of opinion; to think; to judge; to conclude; N. in *OE.*, judgment; opinion. DEEM'ING, imp. DEEMED, pp. *dēmd.* DEEM'STER, n. *-stėr*, or DEMSTER, or DEMPSTER, or DOOMSTER, officer formerly attached to the high court of justiciary in Scotland, who pronounced the doom or sentence of condemned persons. The office was held with that of executioner. At the conclusion of a trial, this dread official was produced in open court, in presence of the criminal: see tale of *Old Mortality*, and notes to that work, and to *Heart of Mid-Lothian.* The office has been long abolished. In the Isle of Man, and in the Channel Islands, deemster is a kind of judge.

DEEMS, *dēmz*, CHARLES FORCE, D.D., LL.D: b. Baltimore, 1820, Dec. 4: minister and author. He graduated at Dickinson College, Penn., 1839; entered the ministry of the Meth. Episc. Church; became prof. of logic and rhetoric in the univ. of N. C, 1841, and of natural science in Randolph-Macon College, Va., 1846; resigned the latter office to become pres. of Greensboro Female College, N. C., 1846; and returned to pastoral work, 1852. In 1858, he was a second time elected a delegate to the general conference of the Meth. Episc. Church; 1860, spent six months in European travel; and 1860-65, was presiding elder in the Wilmington and Newbern dist., N. C. He removed to New York 1865, engaged in literary work, became pres. of Rutgers Female College, and established the Church of the Strangers, 1866, of which he is still (1888) pastor. In 1870 the late Cornelius Vanderbilt bought the building of the Mercer Street Presbt Church, and presented it to Dr. D. and a board of trustees for the use of the congregation. Dr. D. has edited *Frank Leslie's Sunday Magazine*, and 5 vols. of the *Southern Methodist Pulpit*, compiled 3 vols. of *Annals of Southern Methodism*, and is now (1888) editor of *Christian Thought*, a monthly magazine; was one of the founders of the Institute of Christian Philosophy, and has been its pres. since 1881; has published many volumes of sermons and addresses, and contributed largely to periodical literature; and is author of *Triumph of Peace and Other Poems* (1840), *Life of Rev. Dr. Clarke* (1840). *Devotional Melodies* (1842), *Twelve College Sermons* (1844), *The Home Altar* (1850), *What Now?* (1853), *The Light of the Nations* (1868), *Weights and Wings* (1874), and *A Scotch Verdict in Re-Evolution* (1886). He received the degree D.D. from Randolph-Macon College 1850, and LL.D. from the Univ. of N. C. 1877.

DEEN, or DIN, n. *dēn* [Ar. *din*]: in *India*, faith; religion; used as a Mohammedan war-cry to rally the faithful.

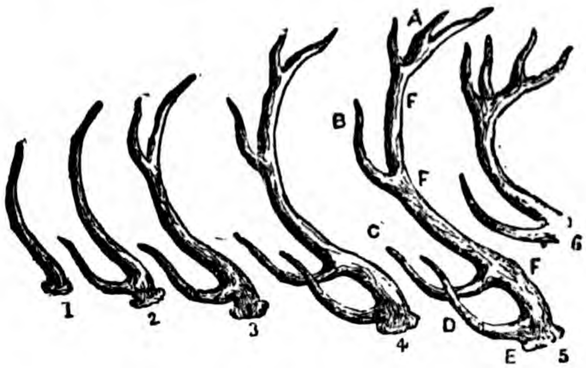
DEEP, a. *dēp* [Goth. *diups;* Icel. *diupr;* Dut. *diep*, deep: Dut. *dompen*, to plunge under water]: being far below the surface; extending far downward; low in situation, as a valley; not shallow; hidden; secret; penetrating; artful; insidious: grave in sound; low; solemn; profound; sagacious; abstruse; thick; dark-colored; profoundly quiet; depressed; sunk low: heartfelt; affecting: AD. for *deeply:* N. the sea; the ocean; that which is not easily fathomed. DEEPER, ad. more deeply, as drink deeper. DEEP'LY, ad. *-lĭ*, to a great depth; not superficially; profoundly; with great sadness; sorrowfully; in a great or high degree. DEEP'NESS, n. remoteness from the surface downward. DEEPEN, v. *dēp'n*, to make deep; to sink lower; to make darker; to make more distressing or sad: to increase; to become deeper. DEEPENING, imp. *dēp'nĭng.* DEEPENED, pp. *dēp'nd.* DEEP-MOUTHED, having a loud hollow voice. DEEP-READ, not superficial; profoundly versed. DEEP-

TONED, having a very low tone. **DEEP OF NIGHT**, in *OE.*, in the stillness of night far advanced; midnight; dead of night.

DEEP BOTTOM, **BATTLES NEAR**: contests in the vicinity of Richmond during the civil war. D. B., a hamlet in Henrico co., Va., on the n. side of the James river, opposite Jones' Neck, 12 m. by land and 20 m. by water below the Confederate capital, was considered a most stragetic point by both armies, and was several times occupied by each. In close proximity is Malvern Hill, to which Gen. McClellan retreated after his defeat at Gaines's Mills and where he was attacked by Gen. Lee, 1862, July 1. The battle opened at 3 o'clock P.M. and was stubbornly fought by both sides till darkness ended it with a Confederate defeat and loss of 10,000 men. This action was the last of Gen. McClellan's seven days' battles, in which he lost 20,000 men and large quantities of artillery, arms, and stores, but was not followed up to advantage. In 1864, June, Gen. Butler occupied D B., laid a pontoon bridge across the river, and repulsed an attack by a part of Gen. Lee's army. In Aug following the Confederates were in possession, and Gen. Hancock's corps made a demonstration against it and captured 6 pieces of artillery and a few prisoners. When Gen. Grant started on his Sep movement against Richmond and Petersburg, to prevent Gen. Lee from detaching troops for service elsewhere, Gen. Bntler was ordered to make an advance upon the works at D. B. Fort Harrison, the strongest work n. of the James, was captured with 15 guns and several hundred prisoners Sep. 29; and on the following day the Confederates made three attempts to retake it by assault, but were repelled each time with considerable loss.

DEEP RIVER: tributary of the Cape Fear river, N. C.; called by the Indians Sapponah; rises in Guilford co., flows s.e. through Randolph co., e. through Chatham co., and with the Haw forms the Cape Fear river at Haywood, Chatham co.; length 100–130 m.; navigable from its mouth to the coal mines. Along its banks are a number of bituminous, semi-bituminous, and anthracite coal fields, the whole supposed to have an area of 40 sq. m., and a productive capacity of 240,000,000 tons. Considerable deposits of copper and iron have been discovered near its banks in Chatham co.

DEER, n. sing. or plu. *dēr* [AS. *deor;* Goth. *diurs;* Icel. *dyr;* Ger. *thier*, a beast, an animal—a sense which the English *deer* anciently had: Gr. *thēr*, a wild beast—*lit.*, a wild animal. deer meant originally wild-beast, then game in general, lastly a particular species of game]: a ruminant quadruped with large branching horns, of several species. —their flesh is called vension; in *OE.*, an animal of any kind.—DEER denotes a Linnæan genus of ruminant quadrupeds, now constituting the family *Cervidæ*, which some naturalists have divided into a number of genera, while others regard it as forming only one genus, the distinctions between its groups not seeming to them sufficiently marked or important for generic characters. Deer are animals of graceful form, combining much compactness and strength with slenderness of limb and fleetness. They use their powerful horns for weapons of defense, and sometimes of offense; but in general they trust to flight for their safety. They have a long neck, a small head, which they carry high, large ears, and large full eyes. In most of them there is, below each eye, a sac or fold of the skin, sometimes very small, sometimes of considerable size, called the *suborbital sinus, lachrymal sinus,* or *tear-pit*, the use of which is not known. Deer have no cutting teeth in the upper, but eight in the lower jaw; the males have usually two short canines in the upper, but neither sex has any in the lower jaw; the præmolars are three, and the true molars three on each side in each jaw. They are distinguished from all other ruminants by their branching horns (antlers), which in most of the species exist in the male only; they are solid and deciduous, i.e., fall off annually, and are renewed with increase of size, and breadth of palmation, and number of branches, according to the kind, until the animal has reached old age, when the size of the horns begins to diminish on each annual renewal. The size and development of the horns are closely connected with the sexual system, and their annual renewal takes place just in time for the rutting season, when they are much used in fierce combats. Females with diseased ovaries sometimes have horns like those of the male.



The annexed cut represents the horns of the stag at different ages. During the first year there is only a slight protuberance; the second year is marked by the *brow antler* (1); the third year, by the *bay antler* (2); the fourth, by the *tray antler* (3); the fifth, by the *crockets* (4); the sixth, by the *beam antler* (5), whose various parts are termed (A) *crockets,* (B) *tray,* (C) *bay,* (D) *brow,* (E) *pearls,* (F) the *beam of the antler;* beyond the 6th year (6).

The horn of a deer is a continuation of bone from the outer table of the skull, and is at first clothed with a velvet-like covering (the '*velvet*'), continuous with the outer integuments of the head. The velvet is soon rubbed off—the animal appearing impelled by some irritation to rub it against trees or rocks—leaving the horn hard and solid, with traces of the course of the many vessels employed for its production. The growth of the horn is very rapid. When the old horn has been cast, there is a wound which bleeds a little, but is soon skinned over with a fine film, and the new horn almost immediately begins to sprout. Cast-horns are very rarely found in deer-forests, a fact that has never been satisfactorily accounted for. The growth of the horn is attended with much heat, and the blood-vessels which supply the head enlarge in size. The last part of the process is the formation of a rough circle of bony tubercles (the *burr* or *pearl*) at the base of the horn, bearing some proportion to the size of the horn and the age of the animal. It is by the these, as they enlarge, that the nutritive vessels of the 'velvet' are compressed and obliterated.—Deer are clothed almost uniformly with hair, longer and thicker in cold than in warm climates. The tail of all the species is short. The horns of some are broadly palmated, those of others are rounded; and importance has been attached in classification to their having or wanting a distinct *snag* or short branch projecting in front from the base of the antler; which is present, e.g., in the stag, fallow-deer, reindeer, and axis, and wanting in the roebuck, elk, and cariacou. The broad palmation of the horns of species inhabiting the coldest climates has been supposed to be intended for turning over the snow in search of food. One of the most beautiful adaptations in nature is a peculiarity of the foot of the reindeer, by which the hoofs separate to a remarkable width, and the greater extent of surface prevents the foot from sinking in soft snow. Deer are found in almost all parts of the globe except Australia and s. Africa, their place in the latter region being supplied by antelopes in extraordinary number and variety. Some of them live amid the snows of very northerly regions, and some in tropical forests; the greater number inhabit the warmer temperate countries, and they are found chiefly in wide plains and hills of moderate height, none dwelling on those lofty mountain summits which are the chosen abode of some animals of the kindred families of *Antilopidæ, Capridæ,* and *Moschidæ,* as the chamois, the bouquetin, and the musk. The flesh (venison) of most kinds of deer is highly esteemed for the table, and they have long been regarded as among the noblest objects of the chase. Only one species, the reindeer, can be said to have been fully domesticated and reduced to the service of man; though individuals of many species have been rendered very tame.

See **Axis**: **Cariacou**: **Elk**: **Fallow-deer**: **Muntjak**: **Reindeer**: **Rusa**: **Stag**: **Wapiti**: etc.—The **Musk** (q.v.), though sometimes called Musk-deer, is not of the deer family.

DEER, or **DEIR**, *dēr*, Old: village and parish in the n.e. of Aberdeenshire, in the district of Buchan. Here are vestiges of a Cistercian monastery founded about 1219, by William Cumyn, Earl of Buchan, on the site of a church believed to have been planted by St. Columba, and his disciple St. Drostan, about 580. A few MSS. which had belonged to the monks of Deir, found their way, after the Reformation, to the Univ. Library at Cambridge; and among them one has been recently discovered by Mr. Bradshaw of Cambridge, which has come to be known among archeologists and philologists as the *Book of Deir*. It contains a copy of the gospels (in the Latin version of St. Jerome) and of the Apostles' Creed, in the handwriting of the 9th c., with a portion of a *Missa de Infirmis*, or 'Communion of the Sick' (containing a Celtic or Gaelic rubric), in a later hand. On the blank leaves at the beginning, in the handwriting of the early part of the 12th c., are a few notes or memorials, in the Celtic or Gaelic language, recording 'How Columcille and Drostan came from Hi to Aberdour, and how Bede the Pict, who was then Maormohr of Buchan, gave them the towns of Aberdour and Deir,' and how succeeding maormohrs, chiefs of clans, kings, and others, added to the immunities and endowments of the church of Deir. These notes or memorials are of great philological interest, as the only known examples of the Celtic speech of Scotland in the 12th c. They are also of great historical interest, as opening glimpses of the social state of the country during the obscure period between the 7th and 12th c. The *Book of Deir* has been edited for the Spalding Club, by John Stuart, LL.D., the secretary.

DEER′FIELD: town, Franklin co., Mass.; at junction of D. river with the Conn.; on Conn. River railroad; 4 m. s. of Greenfield, 33 m. n. of Springfield, 90 m. w. by n. of Boston. The region was settled 1670. D. is tastefully built, has a bridge across D. river 750 ft long, contains D. Acad., 2 high schools, and several churches, and has a variety of important manufactories in the part set off as South D. The latter, formerly known as Bloody Brook, was the scene of the massacre of Capt. Thomas Lathrop and 76 of his command by the Indians five years after the settlement. The village of D. was attacked by a joint French and Indian force under De Rouville, 1703, when all buildings except the church and one house were burned, 36 of the people killed, 108, including the Rev. John Williams and his family, taken captive, 13 killed beyond the village, and the remainder marched to Canada. In 1706 the survivors were set at liberty, but Mr. Williams's daughter married an Indian and remained with his people. Pop. (1870) 3,632.

DEER-FORESTS: tracts of country devoted to the use of red deer, or fallow deer, either for sporting or for breeding purposes. Though called 'forests,' trees are very scarce in many of them. The requisites of a Scotch deer-forest are a great extent of quiet ground, high mountain tops and corries, plenty of moorland and pasture. There is now little wood in Scotch deer-forests, and almost all other game, and cattle and sheep must be excluded. The forest of Athole is nearly 200,000 acres in extent. The requisites of an English deer-park, on the other hand, are wood, lawn, with sufficient underwood, rough grass and ferns, in an inclosed and undulating country of rich soil. In Scotland, deer stalking and driving have largely increased during the 19th c. In 1812 there were only 5 forests; in 1883 there were said to be 98, of which 28 had been formed since 1872. In England, since 1750, when fox-hunting superseded deer-hunting, deer are kept chiefly for breeding and ornament; being sometimes fed in stalls. There are, however, several packs of staghounds which hunt the red deer, e.g., in the high ground of Somerset and Devon. Before the civil war there were 700 parks in England; now only 300, of which only 30 have red deer. Among the great Scotch forests may be noted: in *Aberdeenshire*, Ballochbuie, Mar, Glen Tanar, Glen Muick; in *Inverness-shire*, Abernethy, and Glenmore, Rothiemurchus, Ben Alder, Gaick, and Ruthven, Glen Feshie, Glen Strath, Farar, Guisachan, Invermarkie; in *Perthshire*, Blackmount, Athole, Glen Bruar, Glen Artney; in *Ross-shire*, Dundonnell, Strathconan, Torridon, Kintail, Applecross, Wyvis, Diebidale, Kinlochewe, Glen Carron; in *Sutherlandshire*, Morsgail, Reay, Gildermorie, Parph. These forests comprise nearly 3,000,000 acres. They are occupied chiefly by English noblemen and others, not the owners. The best-known English parks are Erridge in Sussex, Talton in Cheshire, Northwich in Worcester, Duncombe in Yorkshire, Eastwell in Kent, Dowrington in Leicester, and the royal park of Windsor. Originally, in both England and Scotland, the king's nobles and the church held special forest jurisdictions of the most oppressive kind. Thus, in Scotland, the forester might forfeit cattle and other goods found within the forest. In England, the Norman lawyers pretended that all game belonged to the king. King John had 18 forests, 13 chases, 781 parks. A chase was an open forest, not subject to special forest law; a park was an inclosed chase on the land of the owner; a *purlieu* was an addition made to an old forest. The *Charta de Foresta* disafforested large tracts of land, and prevented the arbitrary creation of forests. In Scotland, the Stuarts passed many statutes for the protection of deer, and so late as 1680, in the case of Faskellie, the court of session recommended the king not to grant new forests, as hurtful to the lieges. In 1850 the Duke of Athole claimed a right to enter on the neighboring estates to recover deer, but this was not permitted. It is the opinion of many that deer-forests have displaced crofters and sheep in the Scotch Highlands. This was denied by a select committee of the house of commons, who reported on the Game Laws in 1872. Although the majority of evictions has been caused by the enlargement of sheep-farms, many have been caused by deer-forests, which have also hindered the development of sheep-farms. Pasture sufficient for deer is sufficient also for sheep, at least in summer. The damage done by straying deer is very serious. For the discussion of this and other problems in connection with deer-forests, and the remedial measures proposed, see the Report of the Crofters' Commission, published 1884. For the use of deer-forests, see the *Hand-book of Deer-Stalking,* by Alex. Macrae (Edinburgh 1880). One-tenth of the heather should be burned every year, the heather living 10 or 12 years; and in each forest a sanctuary should be provided. See also Manwood's *Forest Laws;* Shirley's *Account of English Deer-Parks* (Lond. 1867); Macdonald on *Cattle, Sheep, and Deer* (Lond. 1872). Some dissatisfaction has been expressed that deer-forests and other shootings are not entered in the valuation roll for purposes of assessment, unless they are actually let. Dissatisfaction is beginning to be expressed also concerning the withdrawal of such large areas from tillage and pasturage.

DEER-GRASS, or MEADOW BEAUTY: in botany, *rhexia Virginica;* genus of an Asiatic plant of the order *melastomaceæ,* found chiefly in New England. It is noted for the beauty of its flowers, which have bright purple petals, and thrives best on meadow land, whence it is locally known as M. B. It is said that there are but eight species of the order in the United States.

DEERMOUSE, or JUMPING MOUSE (*Meriones*): genus of American rodent quadrupeds allied to mice and to jerboas, and differing from the gerbils of the warm parts of the old world only in the greater length of their hind legs, the nakedness of the tail, and the existence of a very small tooth in front of the molars of the upper jaw. The D. or Jumping Mouse of Canada (*M. Canadensis*), common in that country, and often seen in summer and autumn, is a beautiful agile little creature, of the size of a mouse, with a very long tail, and very long slender hind legs. It is capable of taking leaps of four or five yards. It burrows, and passes the winter in a state of lethargy.—Another species, the Labrador Jumping Mouse (*M. Labradoricus*), inhabits the still more northerly parts of N. America.

DEER-STALKING, *dĕr'stawk-ĭng:* art of following the red deer by cautious maneuvering, hiding and stealing upon it, for the purpose of shooting it with a rifle. As practiced in the Highlands of Scotland, it is perhaps unequalled as a sport in fatigue as well as in excitement. The extensive tracts of hill-land over which deer roam, and on which they are stalked, are termed 'deer-forests,' few of which, however, notwithstanding the appellation, can boast of a single tree; and where these 'forests' belong to noblemen and others peculiarly addicted to the sport, deer are strictly preserved, to the almost total exclusion of sheep and cattle. This sport is more highly esteemed, and greater sums are paid for it by its devotees than for any other in Scotland. This arises chiefly from two causes;

1st, from the intense excitement occasioned in the pursuit of the red deer; and 2d, from the comparative scarceness of good forests. Deer-stalking demands many expensive accessories, among which are: deer-hounds, hounds trained to pursue and bring to bay wounded game; one or more guides to accompany the stalker; and hill-men to *drive* the deer, when that method of obtaining shots is determined upon, etc. However excellent a marksman the deer-stalker may be, and though he may be moderately conversant with the general 'lie' and bearings of the ground, he is almost always accompanied by an experienced guide, upon whose cool judgment, keen eye, and thorough knowledge of every knoll and rock of the 'forest,' depends greatly his chance of obtaining a shot. A dress resembling in color as nearly as possible that of the ground to be gone over; a rifle of first-rate make, and previously practiced with at various distances; a deer-hound or more, that watch constantly in perfect silence for the slightest look or sign from their master; a robust constitution, to stand the fatigue of walking, crouching (sometimes in water), crawling, and advancing on the back, feet first, are some of the requisites the deer-stalker must possess. To these must be added unflinching perseverance and untiring patience; and even then, unless the hunter is gifted by nature or experience with *nerve* to take instant and careful advantage of the rare opportunities a day's stalk may offer, his previous care and toil must go for nothing. The deer-stalker should always be provided with a good telescope. The season for killing red deer begins Oct. 20, and closes June 9. This sport depends more upon the vicissitudes of wind and weather than perhaps any other. Deer are gifted with very keen scent, for which the stalker must allow by advancing upon his game *up* the wind. They are also far-sighted, and exceedingly prone to take alarm at the slightest sound, faculties which warn the stalker never to let himself or his attendant be seen, and to observe the strictest silence. Deer, if disturbed, for the most part look for the cause as proceeding from the *low grounds*, and rarely from above; this peculiarity is duly taken advantage of by the sportsman, who accordingly advances upon his game, wind permitting (frequently by the most circuitous and precipitous paths), *down* hill. When thus approaching deer feeding in the valley below, the utmost caution is requisite, both as regards speed and the mode of progression. The stalker must advance inch by inch on his back, by resting himself on his elbows, and drawing himself forward by his heels; he must observe every motion of the deer, stopping when they stop feeding, and retaining his position, irksome though it be, till his game recommence pasturing; he must never, even for an instant, display the slightest unusual motion during his toilsome and stealthy advance, and must submit implicitly to every signal and whisper from his guide. During protracted stalks, especially when the ground between man and deer is free from sheltering knolls, the stalker's patience is tried to the utmost by his having to pause so frequently in his progress; the stalk, however, is usually directed not so much *directly* toward the deer, as for some intervening knoll or rock where a little relaxation of limb and breathing-time may be obtained, ere firing. Thus, if fortunate in properly winding the deer, and if the stalk has been successfully accomplished, the herd may be reached within 50 or 100 yards. The game may possibly consist of either a single stag, or some hinds and one or two stags; the finest of the latter is usually the aim of the true stalker, and the most deadly spot to aim at is behind the shoulder. If mortally hit, the animal frequently bounds away for 20 or more yards, and then falls dead; if not mortally struck, it will sometimes fall at the shot, and spring up again, and follow the retreating herd. It is then the deer-hound is slipped. When a deer is killed, and cannot be immediately conveyed home, the attendant instantly disembowels it, that the venison may not be tainted This operation is termed *gralloching*. The best stag in the herd is that which is the fattest, and has the finest antlers: see DEER When there are more than one sportsman, or where the peculiarities of the ground are such as to render the task of stalking unusually difficult, hill-men are employed to drive the deer toward certain passes, behind which the shooters are previously concealed. On such occasions, the excitement produced by the gradually approaching and unsuspecting herd, mingled with the grandeur of the whole scene, as they at length rush through the fatal pass, is enough to try the nerves even of the most experienced stalkers. The Black Mount, belonging to the Earl of Breadalbane, and the Forest of Athole, belonging to the Duke of Athole, are the finest deer-forests in Scotland. One of the best works on deer-stalking is Scrope's treatise, 1838; 3d ed. 1847.

DEER'-STEAL'ING: felony under British law. It consists in unlawfully hunting, snaring, or carrying away, killing or wounding any deer kept in the inclosed part of a park, chase, or other inclosure (penalty, two years' imprisonment, and hard labor). For the same action, if the deer be in the uninclosed portion of the park, the penalty is a fine not exceeding £50, which the justice may modify as he shall see fit; but the second offense, in every case, is to be considered felony. Suspected persons found in possession of venison, or of the head or skin of a deer, or of snares or engines for taking deer, who shall not be able to satisfy the justice that they came lawfully by the venison, or had a lawful occasion for the snare, may be fined a sum not exceeding $20. A like penalty is imposed for setting engines for taking deer, and pulling down park-fences. Deer-keepers and their assistants may seize the guns, snares, dogs, etc., of offenders who do not deliver them up on demand, and resistance on their part is declared to be felony. In Scotland, the offense of breaking into a deer-park and shooting deer is punishable as theft. Shooting a stray deer without the owner's consent, is punishable by fine. Though a proprietor is not entitled to kill deer trespassing on his property, he may drive them off; and one of two co-proprietors may drive off deer against the will of another (Irvine, *Game-laws*, p. 13).

DEESIS, n. *dĕ-ē'sĭs* [Gr. *deēsis*, a supplication]: an invocation; a supplication.

DEFACE, v. *dĕ-fās'* [OF. *desfacer*, to efface, to rase—from F. *des*, and *face*—from L. *dis*, apart, away; *faciēs*, the face: F. *défaire*, to undo]: to destroy or injure the face or surface of anything; to disfigure; to obliterate or erase. DEFA'CING, imp. DEFACED', pp. *-fāst'*. DEFA'CER, n. *-sėr*, one who. DEFACE'MENT, n. *-mĕnt*, injury to the surface of anything. DEFA'CINGLY, ad. *-lĭ*.

DE FACTO, *dē fak'tō* [Lat.]: in fact, in reality; or in possession. One actually reigning is king *de facto;* one who has the right to reign is king *de jure*, or in right and justice.

DEFÆCATE: see DEFECATE.

DEFALCATE, v. *dĕ-făl'kāt* [mid. L. *defalcātus*, cut away with the falx, deducted—from L. *de* for *dis*, apart, away; *falx*, a pruning hook: F. *défalquer—lit.*, to cut off as with a pruning-hook]: to take away; to deduct; to abstract a part, used chiefly of money and accounts. DEFAL'CATING, imp. DEFAL'CATED, pp. DEFALCATION, n. *dē'făl-kā'shŭn* [F.—L.]: diminution; fraudulent deficiency in money matters; breach of trust, applied to money.

DEFAMA'TION: see LIBEL.

DEFAME, v. *dĕ-fām'* [F. *diffamer*—from OF. *defamer*, to take away one's reputation—from L. *diffamārĕ*, to spread an evil report—from *dif*, asunder; *fama*, fame, repute: It. *diffamare*]: to spread an evil report of; to speak evil of; to slander; to calumniate; to asperse; to vilify. DEFA'MING, imp. DEFAMED', pp. *-fāmd'*. DEFA'MER, n. one who. DEFAMATION, n. *def ă-mā'shŭn*, the uttering of slanderous words in order to injure another's reputation: see LIBEL.—DEFAMATORY, a. *dĕ-făm'ă-tėr-ĭ*, false and injurious to reputation; slanderous. DEFAMINGLY, ad. *dĕ-fā'mĭng-lĭ*.—SYN. of 'defamation': calumny; aspersion; detraction; slander; libel; vilification; reviling.

DEFAULT, n. *dĕ-fawlt* [OF. *deffaut* and *defaulte;* F. *défaut*, defect—from L. *de* for *dis;* It. *falta;* F *faulte* or *faute*, defect, want]: neglect to do what duty or law requires; a failure; defect; an omission; non-appearance in court at trial of case; a military offense: V. in *OE.*, to withhold or neglect by default: to offend. DEFAULT'ER, n. *-ėr*, one guilty of an offense; one who fails to account for money intrusted to his care, particularly public money; a peculator. DEFAULT'ED, a. having defect; called out of court as a defendant. JUDGMENT BY DEFAULT, judgment in favor of plaintiff when defendant has failed to appear in the case, or to lodge a sufficient plea, or other pleading, within the prescribed time. Judgment by default is not necessarily final. In case of non-appearance, it will be set aside on the defendant making affidavit as to the cause of non-appearance, and disclosing a ground of defense on the merits. If judgment have been for want of a plea, etc., it may also in general be set aside on an affidavit of merits.

But in both cases, the defendant must suffer the costs of the proceedings.

DEFEASIBLE, a. *dĕ-fē'zĭ-bl* [OF. *des* for L. *dis*, apart; F. *faisable*, practicable—from F. *défaire*, to undo—from L. *facĕrĕ*, to make or do]: that may be annulled. DEFEA'SIBLENESS, n. *-bl-nĕs*. DEFEA'SANCE, n. *dĕ-fē'zăns* [Scot. *defaisance*, acquittance from a claim—from F. *défaisance*—from F. *défaire*, to undo]: act of rendering null; the preventing of the operation of an instrument; in *OE.*, defeat; conquest. DEFEA'SANCED. a. *-zănst*. DEED OF DEFEASANCE, in *English law*, instrument which defeats the force or operation of some other deed or estate; and that which in the same deed is called a condition, in a separated deed is called a defeasance. Defeasance of the freehold is a collateral deed, owing its origin to the restrictions on the conveyance of land imposed by the feudal law. Under that system, every tenant of land was by virtue of his tenancy, vassal under a superior lord, to whom he owed suit and service. The consent of the lord was necessary for every change of vassal; and the law would not recognize a condition whereby, in a particular event, the land should revert to the original tenant, and the over lord be thus forced to change his vassal. Hence, when a holder of land wished to obtain money on the security of his land, the conveyance to the lender was *ex facie* absolute; but a deed of defeasance was executed, in virtue of which the borrower, on payment of his money, could recover his land. In this manner mortgages were originally effected. In process of time, the practice of inserting conditions in the original conveyance became established, and from that period, deeds of defeasance have ceased to be in general use. For the ancient usage to the same effect in Scotland, see WADSET: DISPOSITION: HERITABLE SECURITIES.

There is a deed of defeasance, also of executory interests, which may be made at any time after the creation of the estate to which it refers: it must be with the same formalities as the deeds which created the estate, and between the same parties or their representatives.

DEFEAT, v. *dĕ-fēt'* [F. *défaite*, defeat, check—from *défaire*, to undo—from F. *des* for L. *dis*, apart; L. *facĕrĕ*, to do]: to vanquish or overcome; to frustrate; to disappoint; to resist with success; to baffle; in *OE.*, to disguise; to alter: N. an overthrow; loss of battle; prevention of success; frustration; in the *army*, a complete want of success in battle—a *repulse* denotes less than a defeat, and a *rout* more. DEFEAT'ING, imp. DEFEAT'ED, pp. DEFEATURE, n. *dĕ-fē'tūr*, in *OE.*, change in features or countenance.—SYN. of 'defeat, v.': to disconcert; confound; discompose; foil; vanquish; overcome; disperse; overthrow.

DEFECATE, v. *def'ĕ-kāt* [L. *defæcātus*, cleansed from the dregs—from *de*, *fæx*, dregs or refuse matter: It. *defecare*]: to cleanse from refuse matter; to purify; to refine; to clear from dregs; to clarify.. DEF'ECATING, imp. DEF'ECATED, pp. DEF'ECA'TION, n. *-kā'shŭn*, purification from dregs; act of voiding the bowels.

DEFECT, n. *dĕ-fekt′* [L. *defectus*, a failure, a lack—from *de, factus*, made or done]: a failure or deficiency; want of something necessary; fault; an imperfection; blemish; deformity. DEFEC′TION, n. *-fĕk′shŭn* [F.—L.]: a failure of duty; the act of abandoning a person or cause from choice or necessity; revolt; apostasy. DEFEC′TIVE, a. *-tĭv*, imperfect; faulty; wanting in something; deficient. DEFEC′TIVELY, ad. *-lĭ*. DEFEC′TIVENESS, n. the state of being imperfect or faulty. DEFEC′TIBLE, a. *-tĭ-bl*, deficient; wanting. DEFEC′TIBIL′ITY, n. *-bĭl′ĭ-tĭ*, state of failing; deficiency.

DEFEND, v. *dĕ-fĕnd′* [F. *défendre*—from L. *defendĕrĕ*, to ward off or repel: It. *difendere*]: to ward off or repel; to maintain or vindicate by force or argument; to secure against attack; to shelter; to cover; to guard; to resist. DEFEND′ING, imp. DEFEND′ED. pp. DEFEN′DER, n. one who. DEFEN′DABLE, a. *-dă-bl*, that may be defended. DEFEN′DANT, n. one who defends himself against assailants; the person summoned into a court to reply to certain charges. DEFENDER OF THE FAITH, a title of the sovereigns of England, first conferred upon King Henry VIII. by Pope Leo X., for writing against Martin Luther, 1521, —the title is said, however, to have belonged to the sovereigns of England before that time. When the king afterward suppressed the religious houses at the Reformation, the pope not only recalled the title, but deposed him. The title was afterward confirmed by parliament (35 Henry VIII. c. 3), and has ever since been used by British sovereigns. The corresponding title in Spain is, Most Catholic, and in France was, Most Christian King. SYN. of 'defend': to protect; repel; drive back; maintain; uphold; deny; oppose; contest.

DEFENSE, or DEFENCE, n. *dĕ-fĕns′* [F. *défense*—from mid. L. *defensa*, a defending—from L. *defensus*, warded off or repelled]: anything that protects from danger, injury, or attack; protection; justification; resistance; opposition; reply to demands or charges, as in a court of law; in *OE.*, skill in the art of self-defense, and fencing and boxing. DEFENSE′LESS, a. without means of warding off danger, injury, or assault. DEFENSE′LESSLY, ad. *-lĭ*. DEFENSE′LESSNESS, n. DEFEN′SES, n. plu. *-fĕn′sĕz*, in *Scots law*, all the pleas or replies offered for the defender in an action; fortified positions for defense.

DEFENSIBLE, a. *dĕ-fĕn′sĭ-bl* [mid. L. *defensib′ĭlis*, defensible—from L. *defensus*, warded off or repelled (see DEFENSE)]: that may be defended; that furnishes the means of defense. DEFEN′SIBLY, ad. *-blĭ*. DEFEN′SIBIL′ITY, n. *-bĭl′ĭ-tĭ*, or DEFEN′SIBLENESS, n. *-bl-nĕs*, capability of being defended. DEFEN′SIVE, n. *-sĭv*, that which defends; posture of defense: ADJ. serving to defend; in a posture of defense. DEFEN′SIVELY, ad. *-lĭ*. ON THE DEFENSIVE, said of a force when it takes up a position to receive an attack—when making attacks, the force is acting ON THE OFFENSIVE.

DEFER, v. *dĕ-fėr′* [F. *différer*, to put off—from L.

differrĕ, to carry different ways—from *dis*, asunder; *ferrĕ*, to bear or carry: It. *differire—lit.*, to carry different ways]: to put off; to delay. **DEFER'RING**, imp. **DEFERRED'**, pp. *-fĕrd'*.—**SYN.** of 'defer': to postpone; procrastinate; prolong; protract.

DEFER, v. *dĕ-fĕr'* [F. *déférer*, to confer, to bestow—from L. *de*, *ferrĕ*, to bear or bring: It. *deferire—lit.*, to bear or bring down one's self]: to yield or lean to another's opinion; to submit in opinion. **DEFER'RING**, imp. **DEFERRED'**, pp. *-fĕrd'*. **DEFERENCE**, n. *dĕf'ĕr-ĕns* [F.]: a yielding in opinion to another; regard; respect; complaisance. **DEF'EREN'TIAL**, a. *-ĕn'shăl*, expressing deference. **DEF'EREN'TIALLY**, ad. *-lĭ*. **DEFER'RER**, n. one who.

DEFERENT, *dĕf'ĕr-ĕnt:* old term in astronomy, originating in the Ptolemaic system (q.v), signifying a circle on which the centre of another circle moves, while a body is supposed to be moving on the latter itself. If we suppose the sun to be moving round a centre in space, while the earth moves, say, in a circle round the sun, then the sun is moving in the deferent.

DEFERVESCENCE, n. *def'ĕr-vĕs'sĕns* [L. *defervescens*, cooling down—from *de*, *fervĕō*, I am hot]: cessation of ebullition; the act or state of growing cool; loss of heat.

DEFFAND, *dā-fŏng'*, MARIE DE VICHY-CHAMROUD, Marquise DU: 1697–1780, Sep. 24; b. Burgundy: leader in literary and social life. She was of noble birth and Parisian education, naturally beautiful and witty, but became an extreme skeptic in early life. When 20 years old she was married against her will to the Marquis du D., from whom she soon separated, though subsequently reconciled to him for a brief period. She opened a grand establishment in Paris, to which her beauty, intelligence, and accomplishments attracted the most prominent literary and philosophical minds of the day, not only of the city and country, but also of many foreign capitals. For many years she was a leading personage at the French court, and led a life of fashionable dissipation. She became blind when 54 years old, and then made her abode in the convent of St. Joseph, where she entertained Choiseul, Bouflers, Montesquieu, Voltaire, D'Alembert, David Hume, and Horace Walpole, till her rival, Mlle. de L'Espinasse, attracted D'Alembert and several others from her. Her correspondence with Walpole extended over 15 years.

DEFIANCE, n. *dĕ-fī'ăns* [F. *défiance* (see **DEFY**)]: a challenge, as to fight; a calling upon one to make good any assertion or charge; a setting at naught. **DEFIANT**, a. *dĕ-fī'ănt*, full of the spirit of bravado; bold; insolent. **BID DEFIANCE TO**, or **SET AT DEFIANCE**, to defy.

DEFI'ANCE: town, cap. D. co., O.; on the Maumee river at the mouth of the Auglaize; and on the Wabash and the Baltimore Pittsburg and Chicago railroads, and the Wabash and Erie canal; 44 m. e.n.e. of Fort Wayne, 50 m. w.s.w. of Toledo. It is at the head of steamboat navigation on the river, does a large shipping trade in agricultural products, tobacco, and live stock, and contains a co. courthouse, 2 banks, 11 churches, a female seminary, a union school, an iron foundry, a woolen mill, 2 flour mills, several manufactories, and 2 weekly newspapers. Pop. (1870) 2,750; (1880) 5,907.

DEFICIENT, a. *dĕ-fĭsh'ĕnt* [L. *deficiĕns* or *deficien'tem*, wanting, failing—from *de*, *faciō*, I make]: wanting; imperfect; defective. DEFI'CIENTLY, ad. *-lĭ*. DEFI'CIENCY, n. *-ĕn-sĭ*, imperfection; a falling short. DEFICIT, n. *dĕf'ĭ-sĭt* [L., it falls short]: want; balance on the wrong side of an account; deficiency, as in taxes or revenue.

DEFI'CIENT NUMBER: one whose aliquot parts, or factors, added together make a sum less than the number itself: thus, 16, whose parts, 1, 2, 4, 8, make together only 15, is a deficient number.

DEFIED, DEFIER: see under DEFY.

DEFILADE, v. *dĕf'ĭ-lād'* [L. *de*, down; F. *fil*, L. *filum*, a thread]: in *fort.*, to render an enemy's line of fire harmless or less destructive by raising or arranging exposed sides of works. DEFILADING, imp. *dĕf'ĭ-lā'dĭng:* N. that part of the art of fortification which consists in determining the directions and heights of the lines of rampart, so that the interior may not be commanded by the fire of any works which the enemy may raise. Defilading is divided into horizontal and vertical. The object of the first is to prevent the lines being commanded in the direction of their length, or enfiladed (see ENFILADE); the prolongations of the lines, therefore, must avoid all points where hostile works could be erected. Vertical defilating determines the height of rampart necessary to protect the interior from direct fire. DEF'ILA'DED, pp.

DEFILE, v. *dĕ-fīl'* [L. *de*, for AS. *be*, to make, and AS. *fylan;* Dut. *vuylen*, to make foul or filthy: AS. *gefylan*, to pollute: comp. OF. *defouler*, to trample under foot]: to render unclean or dirty; to make impure; to pollute or corrupt; to violate chastity. DEFI'LING, imp. DEFILED', pp. *-fīld'*. DEFI'LER, n. one who. DEFILE'MENT, n. foulness; uncleanness; corruption; impurity.—SYN. of 'defile': to contaminate; taint; befoul; soil; sully; tarnish; vitiate; debauch; violate.

DEFILE, n. *dĕ-fīl'* or *dē'-* [F. *défiler*, to go in a string—from OF. *des*, F. *dé*, L. *dis*, apart; F. *fil*, L. *filum*, a thread]: a long narrow pass or gorge between hills through which troops can march only with a narrow front, or one by one: wherever free lateral movement is obstructed, is a defile; and where a defile cannot be avoided except by making a long circuit, it is called a 'pass': V. *dĕ-fīl'*, to cause soldiers marching with a broad front to reduce it to a narrow one; to march off in a line or narrow front, as soldiers. DEFI'LING, imp. DEFILED', pp. *-fīld'*.

DEFINE, v. *dĕ-fīn'* [OF. *définer*, to define, to conclude—from L. *definīrĕ*, to limit—from *de*, *finis*, an end: It. *definire*]: to determine or fix the limits; to explain the exact meaning of a word or term; to explain the distinctive properties, etc., of a thing. **DEFI′NING**, imp. **DEFINED′**, pp. *-fīnd′*. **DEFI′NER**, n. one who. **DEFI′NABLE**, a. *-nă-bl*, that may be limited or explained. **DEFI′NABLY**, ad. *-blĭ*. **DEFINITION**, n. *dĕf′ĭ-nĭsh′ŭn* [F.—L.]: a description or explanation; the exact meaning attached to a word or phrase. **DEF′INITE**, a. *-nĭt* [L. *definitus*, limited, defined]: settled with precision; exact; clear; precise. **DEF′INITELY**, ad. *-lĭ*. **DEF′INITENESS**, n. the state of being definite; determinateness. **DEFINITIVE**, a. *dĕ-fĭn′ĭ-tĭv*, determinate; final. **DEFIN′ITIVELY**, ad. *-lĭ*, in a definitive manner; decisively; positively. **DEFIN′ITIVENESS**, n.

DEF′INITE PROPOR′TIONS, LAWS OF, in Chemistry: see ATOMIC THEORY.

DEFINI′TION: explanation or statement of the meaning of a word—either the meaning that it usually bears; or that which the speaker or writer, for the particular purposes of his discourse, intends to annex to it. To give merely another synonymous name—to say, for instance, that 'Man is a human being'—is not properly (i.e. really) a definition; it is merely a sort of nominal definition by the use of a synonym. Names requiring D. mostly imply, or connote, a set of attributes. To define such a name, then, is to enumerate the attributes connoted by it. Hence, D. is a kind of analysis. If we were to define 'Man' as 'a rational animal,' the D., though stating a truth, would be imperfect; for no one would call such beings as Swift's Houyhnhms men, which shows that, in the common acceptation of the word man, it connotes among other things a certain form. D. then, is of the nature of an essential proposition; it conveys no information about the object to any one who is aware of the connotation of its name; it is only a statement of all the attributes, the absence of any one of which would make the object cease to be called by that name.

The D., 'Man is a rational animal,' though incomplete, is correct so far as it goes; though it does not enumerate all the essential attributes—i.e., all the attributes connoted by the name man, yet those that it does enumerate are connoted by the name, and are sufficient to mark out its denotation—that is, to distinguish all the beings known to exist to whom it can properly be applied. Such a D. is generally held, therefore, to be a practically complete D., though logically imperfect; but to say that 'Man is a featherless biped,' involves a different kind of imperfection. The attribute featherless, though actually true of all men, and therefore serving to distinguish them from the only other bipeds, the birds, is no part of the meaning of the word, but is what logicians call an *accidental* attribute. This kind of imperfect D. is called a description. Such descriptive definitions are very common in science, and serve special purposes of classification. In Cuvier's *Animal Kingdom*, man is defined or described as 'a mammiferous animal having two hands.'

A distinction is generally drawn between definitions of names and definitions of things, or *nominal* and *real* defini-

tions. A real D. is intended, it is said, 'to explain and unfold the nature of the thing.' In objection to this view, it is replied, that no D. can unfold the whole nature of a thing, and every true proposition respecting it unfolds some part of its nature; of all the propositions, then, unfolding its nature, how shall we distinguish those that define it, from the others? The answer may be—either select the one, or those, most essential, since such will serve the practical purpose of a D., and will be such sufficient approximation to the truth as are all statements of truth reachable by our finite faculties; or, group and use all the definitions. Some, however, not satisfied with either of these answers, claim that 'all definitions are definitions of names, and of names only,' but that many expressions that pass for definitions, are something more. They not only define the name of the thing, but they comprise a tacit assumption, that a thing with such attributes does or may exist. This, it is said, is the case with the definitions of geometry; and it is from these tacit postulates that the consequences are deduced, and not from the mere definition of the meaning of a word. After hearing both sides, we may perhaps conclude that that view is safest, and most in accord with facts, which considers that our knowledge, and therefore our definitions of things known, however inaccurate and incomplete, are yet dealing not with mere names, but with names of some *things* that exist; and thence that our definitions may deal through names, with things.

As there can be no accurate discussion unless all the terms employed have a distinct meaning recognized by all parties, it is often necessary to have recourse to formal definitions of important names. One of the most effectual devices yet discovered for settling the signification of terms, is to declare the meaning *opposed* to what is intended: in this way any ambiguity in the language is at once cleared. Thus, the word 'natural' conveys no clear meaning of itself; but if we state what we mean to *exclude* when we use it, we narrow the variety of significations to some one of the significations. We may oppose it to 'moral,' and then 'natural' means something connected with the world of matter; we may opposite it to 'constrained' or compelled, giving it the meaning of spontaneous or free; other contrasts are the 'artificial,' the 'distorted,' in copying or representing things, etc.

The scholastic logicians made D. consist in stating, first, the 'genus' that a thing belonged to, secondly, the 'difference' or peculiarities that separate it from all the other members of the same genus. This suits for natural history, and for all subjects analogous thereto. For example, if we were attempting to define 'Poetry,' we could not do better than proceed *per genus et differentiam.* Poetry belongs to the class of Fine Arts: it has all the characters common to Painting, Sculpture, Architecture, Music, etc. Consequently, if we are well acquainted with these other subjects, we can draw from them part of the characteristics that belong to Poetry; for example, its having for its end refined pleasure. We then inquire into the *difference* between it and the others, which we find to be the use of a peculiar medium or instrumentality—viz., thoughts expressed in language. If we would give a more particular account of the meaning, we should find it necessary to specify the *kinds* of poetry, or to find out the *differences* of epic, dramatic, lyric, etc.; which would be to define, not the subject itself, but its subordinate species. See J. S. Mill's *Logic*, I. 182.

DEFLAGRATE, v. *dĕf′lă grāt* [L. *deflagrātum*, to be burned completely—from *de*, *flāgro*, I burn]: to set fire to; to burn rapidly. DEF′LAGRATING, imp. DEF′LAGRATED, pp. DEF′LAGRABLE, a. *-gră-bl*, having the quality of burning with a sudden combustion. DEF′LAGRABIL′ITY, n. *-bĭl′ĭ-tĭ*. DEF′LAGRA′TION, n. *-grā′shŭn*, sudden and violent combustion; e.g., the rapid combustion of ignited charcoal when a nitrate (such as nitrate of potash) or a chlorate (such as chlorate of potash) is thrown thereon. As chlorates do not occur naturally, it follows that deflagration with a natural salt indicates a nitrate; and if the deflagration be accompanied by a violet flame, it is characteristic of nitrate of potash (ordinary nitre or saltpetre); and if by a strong yellow flame, it is indicative of nitrate of soda (cubical nitre). DEF′LAGRA′TOR, n. *-grā′tėr*, a galvanic battery used for obtaining intense light and heat.

DEFLECT, v. *dĕ-flĕkt′* [L. *deflectĕrĕ*, to bend or turn aside—from *de*, down, away; *flectĕrĕ*, to bend or turn]: to bend from a straight line; to turn aside; to swerve. DEFLEC′TING, imp. DEFLEC′TED, pp. DEFLEC′TION, n. *-flĕk′shŭn*, the act of turning down or aside; change of course or line of motion of a moving body; also, synonymous with Diffraction (q.v.). DEFLEXED′, a. *-flĕkst′*, in *bot.*, bent downward in a continuous curve.

DEFLORATE, a. *dĕ-flō′rāt* [mid. L. *deflorātus*, despoiled of—from *de* for *dis; flos*, a flower, *flōris*, of a flower: It. *deflorare:* F. *déflorer*]: having lost its blossoms, as a plant; having shed its pollen. DEFLORATION, n. *dē′flō-rā′shŭn*, the act of taking away a woman's virginity.

DEFLOUR, or DEFLOWER, v. *dĕ-flow′r* [OF. *defleurer*, to defile—from mid. L. *deflorārĕ* for *difflorārĕ*, to gather flowers, to ravish (see DEFLORATE)]: to take away a woman's virginity; to ravish. DEFLOW′ERING, imp. DEFLOW′ERED, pp. *-flow′rd*. DEFLOW′ERER, n. *-flow′rėr*, one who.

DEFLUXION, n. *dĕ-flŭk′shŭn* [L. *defluxĭōnem*—from *defluxus*, flowed down—from *de*, *fluxus*, flowed]: a discharge or running off of humors from a mucous membrane, especially of the air-passages, as from the nose in a cold: synonymous with Catarrh (q.v.).

DE FOE, *de fo′*, DANIEL: 1661–1731, Apr.; b. London; son of James Foe, a butcher. The prefix De was added to the family name of Foe by our author when he had reached manhood. De F., whose father was a dissenter, was educated at a dissenting academy at Newington Green, where he remained until he had nearly reached the age of nineteen. In 1682, he began his career as author, publishing a pamphlet which contained strictures upon the clergy of that day. This was followed, 1683, by another pamphlet, entitled *A Treatise against the Turks.* In 1685, he took part in the rebellion of the Duke of Monmouth, but luckily escaped being punished on its suppression. After this he engaged in trade, but a series of misfortunes finally determined him to forsake it.

In 1701, he published his famous satirical poem, *The True born Englishman,* written in vindication of King William, and in answer to a poem in which he had been attacked, called *The Foreigners.* This poem was a wonderful success; 80,000 'pirated' copies of it were sold on the streets at a very small price. During the same year, when the deputation that presented the famous petition of the freeholders of Kent to the house of commons were illegally thrown into prison, De F. drew up, a few days after, a remonstrance, known in history as the *Legion Memorial;* and is said to have himself, in the disguise of a woman, presented it to the speaker as he entered the house. In 1703, a complaint being made in the house of commons regarding one of his recent publications, called *The Shortest Way with Dissenters* (1702), the whole tenor of which seems to have been misunderstood, he was apprehended, tried, found guilty, pilloried, fined, and imprisoned. While in prison, he wrote a *Hymn to the Pillory;* and here also he projected *The Review,* a periodical which he established on his release, 1704, Aug., and continued to conduct for nine years. In 1706, Lord Godolphin, who admired the practical talent and literary vigor of De F., employed him as one of the staff of the commissioners to Scotland to bring about the Union. De F.'s knowledge of revenue, trade, and taxes was found of great value; and it is supposed that he was rewarded with a pension for his services on that occasion. His visit to Scotland enabled him to write a *History of the Union.* For some years afterward De F. seems to have lived in comfortable circumstances, but gradually his numerous political enemies gathered voice again, and De F. was literally silenced by noise and obloquy; at last, however, roused by the insolence of the Jacobite party, he was once more tempted to write unwarily, and the result was that he was again (1713) apprehended, fined £800, and committed to Newgate. After his release, De F. turned from politics, and, fortunately for the world, sought rest in the sphere of imaginative literature. In 1719, appeared the famous *Robinson Crusoe*—most popular of all his works. Its success was immediate. The publisher, who had accepted the book after all the others had refused it, is said to have cleared £1,000 by its publication—no small sum in those days. De F., in rapid succession, produced his other notable works of fiction. *Moll Flanders* (1721), *Journal of the Plague* (1722), *Colonel Jack* (1721), *Adventures of Roxana* (1724), and the *Memoirs of a Cavalier,* which Chatham used to recommend as the best account of the civil wars extant, bear witness to De F.'s industry during these years. D.'s style, both in his political and imaginative works, is simple, clear, and vigorous. His fictitious narratives are characterized by an unparalleled appearance of truth. This is pre-eminently the case in the *Journal of the Plague*, which for a long time imposed upon the well-known Dr. Mead as genuine. See *Life* by Lee; and that by Minto (1882).

DEFOLIATION, n. *dĕ-fō′lĭ-ā′shŭn* [L. *de*, down; *folĭŭm*, a leaf]: the fall of leaves of plants.

DEFORCE, v. *dĕ-fōrs′* [OF. *déforcer*—from OF. *de* for *des*, L. *dis*, apart, away; *forcer*, to force: mid. L. *disfortĭārĕ* from *fortis*, strong]: to keep possession of an estate unlawfully. **DEFOR′CING**, imp. *-sĭng*. **DEFORCED′**, pp. *-fōrst′*. **DEFORCE′MENT**, n. *-fōrs′mĕnt*, the holding of lands, etc., unlawfully (see FREEHOLD: DISCONTINUANCE): in *Scot.*, the resisting of an officer of justice in enforcing the law. **DEFOR′CIANT**, n. *-fōr′shĭ-ănt*, one who: also a title of the defendant in a suit for levying a fine of lands (q.v.).

DEFORM, v. *dĕ-fawrm′* [F. *déformer*—from L. *deformārĕ*, to disfigure—from *de*, *forma*, a shape: It. *deformare*]: to make ill-shaped and displeasing to the eye; to mar or injure the shape of; to make ugly; to disfigure; to deprive of comeliness; to dishonor: N. in *OE.*, ugly; disfigured. **DEFOR′MING**, imp. **DEFORMED′**, pp. *-fawrmd′*: ADJ. disfigured; misshapen; ugly; base. **DEFORM′ER**, n. one who. **DEFORMATION**, n. *dĕf′ŏr-mā′shŭn* [F.—L.]: act of disfiguring or defacing. **DEFORMEDLY**, ad. *dĕ-fŏr′mĕd-lĭ*. **DEFOR′MITY**, n. *-mĭ-tĭ*, any unnatural shape or form; defect; distortion.

DEFOR′MITY: any unnatural variety of form which mars the external appearance. Deformities may be *congenital* or *acquired*, according as they occur before or after birth. The former class were considered by the ancients to carry some important meaning in their mysterious shapes, and to show the anger of the gods; hence, they termed them *monsters*, from *monstrare*, to show; and even in later times, they were popularly believed to be the result of the most hideously unnatural combinations. Modern scientific writers have, however, made them a subject of special study, under the name Teratology [*teras*, monster, and *logos*, science], and their researches have shown that deformities generally depend on some arrest of development of the fetus, or some accidental position which it has assumed, or some inflammatory disease which has caused unnatural adhesion of parts. It has been found that in 3,000 births in Paris, there occurs about one monster. They generally follow some definite law. Deformities are more common among domestic than wild animals, among mammalia than birds, and very rare among fishes and the invertebrata.

It is a common belief, that the mind of the female parent has an influence over the shape of her infant; but though some singular coincidences have occurred, there is no scientific proof that such is really the case. This theory, however absurd, was eagerly adopted in the middle ages; it was, in fact, often appealed to in the interest of mercy as a loophole of escape for pregnant women, who, by the barbarous ignorance of the time, might be condemned to torture; and so universal has the popular belief in this theory become, that even at the present day no scientific demonstration to the contrary has proved sufficient to undermine it. Deformities are, however, in many cases, hereditary, as may be seen in the instances of additional fingers and toes, and of hare-lips.

It seems uncertain whether the male or female parent chiefly influences the occurrence of deformity in the offspring. One rarely sees a case of hare-lip without being able to recognize a sort of tuck or shortening in the same feature of the mother; but the writer of this article knows a family of three with hare-lips, whose father alone is similarly deformed; and another family of three, with perfectly formed mouths, whose mother has an uncured and extremely unsightly hare-lip.

The chief congenital deformities may be classed under the following heads:

Deformity as regards *number* of parts; as, for instance, the Sirens, who have *apparently* but a single inferior extremity, which tapers to a point; the Cyclops, with but one eye; or the head itself may be absent, or some organ, as the brain. Such deformities from a deficiency of parts, may also result from amputation of portions of the limbs of the fetus when still within the uterus by the pressure of the umbilical cord. It is remarkable, however, that this intra-uterine amputation of parts often leads indirectly to an exactly opposite condition—namely, a multiplication of parts arising from the stumps left by these uterine amputations; the fetus in the early stages of its growth appearing to possess something of the power of reproduction of parts observed in most of the lower orders of animals. The parts most commonly reproduced are fingers and toes, or, most commonly of all, only abortive portions of these, as little projections from the stump of the limb, with traces of nail, and sometimes a single joint with an imperfect bony development. We see a new growth of little fingers or toes according to the member lost, and this power shows itself sometimes without being preceded by such an injury, in additional fingers, toes, etc. These parts are generally close to the similar natural ones, but not always; as, for instance, an ear in the neck.

Deformity with regard to *size*. This may involve the whole body, as in dwarfs, of whom there have been some remarkable peripatetic specimens: the Corsican fairy was only 2 ft. 7½ inches high; Mademoiselle Crachami, the smallest woman on record, died at 10 years of age, only 20 inches in height. This kind of deformity is not necessarily hereditary; the father of Borowlaski, who was only 39 inches in height when 30 years old, had six children alternately short and tall; and dwarf women have brought forth infants as long, when extended, as their mothers. One limb only may be diminutive. Of course, deformities the opposite of these exist, such as giants, or instances of premature or excessive local growth. O'Byrne, the Irish giant, measured 8 ft. 4 inches when he died at the age of

22. Such individuals are generally subject to premature decay.

Deformity as regards *shape:* this results generally from retarded growth, the parts of the embryo not consolidating as growth advances, as in hare-lip; or from irregular muscular contractions, as in Club-foot (q v.); or by two or more parts coalescing, as two fingers; or in Cyclopy, when both the eyes run into one.

Deformities of *color* are frequently co-existent with tendency to, or the presence of, some disease. There may be deficiency of coloring matter, as in albinos; or an apparent increase, as in *blue disease*, arising from the partition between the right and left sides of the heart not being completed; or from some coloring matter produced in the body, as in the mottled individuals shown in caravans.

Deformities of *continuity* occur from the lateral halves of the embryo not completely closing, as seen in clefts of the back, the palate, etc.

For *Acquired Deformities*, see their special titles.

DEFRAUD, v. *dĕ-frawd′* [F. *défrauder*—from L. *defraudārĕ*, to defraud—from *de, fraudo*, I cheat: It. *defraudare*]: to deprive of a right by deceit or artifice; to cheat. DEFRAU′DING, imp. DEFRAU′DED, pp. DEFRAU′DER, n. a cheat.—SYN. of 'defraud': to trick; cozen; deceive; frustrate.

DEFRAY, v. *dĕ-frā′* [F. *défrayer*, to settle the expense of a house, etc.—from *de, frais*, charges, expenses]: to pay or settle, as expenses or charges; to bear, as cost. DEFRAY′ING, imp. DEFRAYED′, pp. *-frād′*. DEFRAY′ER, n. one who. DEFRAY′MENT, n. payment.

DEFT, a. *dĕft* [AS. *dæfte*, fit, convenient]: neat; handsome; dexterous. DEFT′LY, ad. *-lĭ*, dexterously. DEFT′NESS, n. state of being deft; neatness.

DEFUNCT, a. *dĕ-fŭngkt′* [L. *defunctus*, ended, finished —from *de, functus*, performed: It. *defuncto;* F. *défunt*, deceased]: having ended life; dead: N. a dead person. DEFUNCTION, n. *dĕ-fŭngk′shŭn*, in *OE.*, death.

DEFY, v. *dĕ-fī′* [F. *défier*—from OF. *desfier*—from It. *disfidare*, to challenge—from mid L. *diffidārĕ*, to renounce faith, to defy—from *dis*, asunder, apart; *fido*, I trust; *fidēs*, trust, faith—*lit.*, to mistrust]: to dare; to brave; to treat with contempt; to challenge; to invite one to a contest. DEFY′ING, imp. DEFIED′, pp. *-fīd′*. DEFI′ER, n. *-ėr*, one who. DEFI′ANCE, n. *-fī′ăns* [F.]: a challenge; a daring—implying contempt.

DEGENDER, v. *dĕ-jĕn′dėr* [see DEGENERATE]: in *OE.*, to generate; to make degenerate. DEGEN′DERING, imp. DEGEN′DERED, pp. *-dėrd.* DEGEN′ERACY, n.: see under DEGENERATE.

DEGENERATE, v. *dĕ-jĕn′ėr-āt* [L. *degenĕrātus*, departed from its race or kind—from *de, genus*, race, kind: It. *degenerare:* F. *dégénérer*]: to decay in the qualities of race or kind; to become worse; to decay in good qualities; to decline in virtue: ADJ. that has fallen from a good to a worse state or condition; base; mean; fallen. **DEGEN'ERATING**, imp. **DEGEN'ERATED**, pp. **DEGEN'ERA'TION**, n. *-ā'shŭn* [F.—L]: the gradual deterioration in a part of a living body, in the whole living body, or in a race; in *bot.*, a deterioration of growth or development in a part, as when scales take the place of leaves. **DEGEN'ERACY**, n. *-ă-sĭ*, a growing worse; decline in good qualities; vice; meanness. **DEGEN'ERATELY**, ad. *-lĭ*, in a degenerate manner; unworthily. **DEGEN'ERATENESS**, n. the state of being degenerate or corrupt.

DEGER, *dā'ger*, **ERNST**: b. Bockenheim, Hesse-Cassel, 1809, Apr. 15: painter. He studied painting under M. Schadow at the Dusseldorf Acad., and began his career by making remarkable copies of Raphael's *Virgin*. Through the influence of Steinla and Overbeck he applied himself wholly to painting religious subjects; did the fresco painting in the Church of St. Apollinaris, at Remegen on the Rhine, and in the chapel of the castle of Stolzenfels; produced a large number of altar-pieces; was appointed prof. in the Munich School of Fine Arts by the King Bavaria, and subsequently in the Dusseldorf School; and was elected a member of the academies of fine arts in Munich and Berlin. Among his noted works are: *Christ, St. John the Baptist and the Prophets, The Garden of Olives, The Flagellation, Jesus Carrying the Cross, The Ascension, Holy Virgin and St. Joseph*, and *The Infant Jesus.*

DEGERANDO, *dėh-zhėh-rŏng-do'*, **MARIE JOSEPH**, Baron: 1772, Feb. 29—1842, Nov. 12; b. Lyon, France: author and philanthropist. His family was originally from Italy. He studied at the College of the Oratoire of Lyon with a view to becoming a priest; but the persecutions of the revolutionists altered his plans. In 1797, he went to Paris. The *coup-d'état* of the 18th Fructidor compelled him to flee to Germany, where he entered the army of Massena as a common soldier. While at Colmar with his regiment, D. wrote a treatise, which was 'crowned' by the Academy, and which was afterward enlarged and published under the title of *Des Signes et de l' Art de penser, considérés dans leurs Rapports Mutuels* (Par. 1800). In 1802 appeared his *De la Génération des Connaissances Humaines*, a precursor of his *Histoire comparée des Systèmes de Philosophie relativement aux Principes des Connaissances Humaines* (Par. 1803; German, by *Tennemann*), which is reckoned the best French work on the history of philosophy. It procured him, in the following year, admission into the Académie des Inscriptions et des Belles-lettres. About the same time, he was appointed sec. gen. to the ministry of the interior, and subsequently held a variety of high offices under Napoleon. But D. is even better known, and has done more service, by his philanthropic than his philosophic writings. To the former class belong his excellent work, *Le Visiteur du Pauvre* (Par. 1820), which obtained the Montyon prize, as did also his *Du Perfectionnement Moral*, etc. (Par. 1824), his *Cours Normal des Instituteurs Primaires* (Par. 1832), *Institutions du Droit Administratif* (Par. 1835), *Education des*

Sourds-muets de Naissance (Par. 1827). *Des Progrès de l'Industrie* (1841). D. was elevated to the peerage 1837, and at his death was vice-president of the council of state.

His son, A. DEGERANDO, has written two interesting works—*Essai Historique sur l'Origine des Hongrois* (Par. 1841), and *Transylvanie et ses Habitants* (Par. 1845).

DEGGENDORF, *dĕg'ghĕn-dŏrf:* town of lower Bavaria, on the Danube, 29 m. n.w. of Passau. It is well built, and has several churches, a hospital, orphan-house, and poor-house. D. has pottery and linen factories, and carries on brisk trade in these articles, as well as in cattle, fruit, wood, etc. There is a remarkable church on the Geiersberg, possessed of a miraculous wafer, and having 'doors of grace,' opened only once in the year. Many pilgrims (often numbering more than 30,000 annually) flock hither, Pope Innocent VIII. having promised general absolution to all such as visited the church. Pop. (1880) 6,226.

DEGLUTITION, n. *dĕg'lō-tĭsh'ŭn* [F. *déglutition*—from mid. L. *deglūtĭtiōnem*—from *de*, down; *glūtiō*, I swallow]: the act or power of swallowing food: see SWALLOWING.

DEGRADE, v. *dĕ-grād'* [F. *dégrader*, to degrade—from mid. L. *degradārĕ*, to deprive of rank—from *de*, *gradus*, a step or degree, rank]: to reduce from a higher to a lower rank or degree; to deprive of rank or office; to lower; to disgrace. DEGRA'DING, imp.: ADJ. lowering to the dignity, character, and capacities of man. DEGRA'DED, pp.: ADJ. lowered, as from a higher rank or dignity; lowered to a state of wretchedness or misery; in *heraldry*, placed on steps or degrees, as in a *Cross Calvary*. DEGRADATION, n. *dĕg'ră-dā'shŭn* [F.—L.]: a reducing in rank; a depriving of office or situation; the state of being reduced from a more to a less honorable condition; baseness; a state of wretchedness, misery, or crime; in *geol.*, a wasting or wearing down. DEGRADINGLY, ad. *dĕ-grā'dĭng-lĭ.*—SYN. of 'degrade': to abase; humble; disgrace; debase; humiliate; dishonor; demean; reduce; lessen.

DEGREE, n. *dĕ-grē'* [F. *degré*, a step—from L. *de, gradus*, a step]: a step up or down; a portion of space taken as a unit of measure, as a degree of latitude; the 360th part of the circumference of a circle (see CIRCLE); the 90th part of a right angle; a division on a mathematical or other instrument; a stage in progression; rank or station in society; step or remove in line of descent; measure or extent; an interval of sound; rank or title conferred by a university. BY DEGREES, step by step; gradually.—SYN. of 'degree': class; order; rank; step; staircase; grade; gradation; position; station; quality; measure; extent; relationship; proximity.

DEGREE', in a College or University: recognition of the student having made a certain step in advance, and having attained to a certain stage in his academical career. The evidence of a degree is usually called a Diploma (q.v.). Degrees may be divided into various classes, according to the privileges which they confer. 1. They are either simple certificates of attainment granted by a competent authority; attesting either that the college or university granting them has ascertained the fact by examination—in which case they are ordinary degrees—or that the common fame of the individual is such that the learned body conferring the degree is willing to take it for granted, in which case they are honorary degrees. To this class belong some degrees in arts, and the honorary degrees LL D., D.C.L., and D.D., granted by most universities, and in the United States by nearly all colleges. 2. They are licenses to teach the branch of knowledge with which the holder is certified to be acquainted. To this class belonged all doctors', and probably all masters' degrees in the universities of the middle ages: see DOCTOR. 3. They are licenses to practice a certain profession or art. As the latter privilege is one in which the general community is more deeply interested than in either of the others, it is in some countries requisite to its full exercise that the university degree should be accompanied by a government license. These latter degrees—of which M.D. and D.C.L. (see DOCTORS-COMMONS) are the only ones known in Britain,—in this case resolve themselves into one or other of the former classes.

University degrees, like most institutions which have held their place in society long, arose out of public exigencies, and are not traceable to any single founder or to any single act. There is every reason to suppose that, substantially, they have existed for ages. The doctors or teachers of the law (*nomodidáskaloi*), so often mentioned in the New Testament—probably the scribes also—were a class, taken, it would seem, very frequently from the sect of the Pharisees, but essentially distinct from them (Luke v. 17), possessing privileges very closely resembling those which were attached to the degree of a teaching doctor in after-times. In classical Greece, education though far less formal than it afterward became, was probably more systematic than is commonly supposed. Mr. Kirkpatrick, in his ingenious book on the *Historically received Conception of the University*, has traced in the schools of Isocrates and Plato, not only substantially the function, but much even of the external organization of the university. He has shown also, very clearly, that it was the systematic training which had become necessary for success in public life that called the Sophists into existence, and gave to them their marvellous social influence. It was the ambition, not of the higher class of orators and statesmen alone, but of every noisy demagogue who aspired to notoriety, to come before the public with the prestige of having been the pupil of some famous Sophist, or, as we should say, of having been to a good school, and taken a good degree. The appliances of modern teaching existed unquestionably in the museum at Alexandria, and it is inconceivable that those who had passed through the *kuklos* or cycle of studies, should not have carried away some testimonial of proficiency resembling a degree. As there was a distribution both of teachers and of students into what we should call the faculties of philosophy, philology, and medicine, it is probable, moreover, that there were distinct degrees corresponding to each of them. During the three centuries which intervened between Alexander and Augustus, Athens continued the great school of philosophy, as Rhodes was of oratory, and Alexandria of philology and medicine. The importance of an education in the Greek schools rather increased than diminished during the period of the Roman empire. So entirely, indeed, was the success of the young provincial in public life also dependent upon his literary acquirements, that, as Mr. Kirkpatrick informs us, students, before leaving the provinces for Rome, were obliged to obtain a written permission from a magistrate, and that a record of the proficiency of each student was sent in to the government, in order that the latter might be thereby guided in the selection of fit individuals for the public service. In Constantinople, moreover, down to the very last, lifeless and unproductive though the intellectual life unquestionably was, it was formally organized to an extent which reminds one of China rather than of any existing European nation. The worthless and contemptible Byzantines, male and female, like the Chinese, passed endless examinations, and took abundance of degrees. After the incursion of the northern nations, the extreme rudeness of the general community of w. Europe caused the learned class to stand out from it with a prominence unknown in the society of antiquity, and hence the greater importance which academical degrees assumed in the middle ages. A man who had passed through the trivium or quadrivium at Constantinople before barbarism had made learning rare, or who had received the far higher instruction communicated at the museum of Alexandria, did not differ from the society which surrounded him to the same extent as did a master or a doctor at Paris or Bologna.

The minute history of academical degrees in the middle ages is involved in much obscurity. The following are passages from the above-mentioned work of Mr. Kirkpatrick, who has gone over the authorities with much care: 'Wood mentions (*Hist. and Antiq. of Oxford*, I. 50) that St. John of

Beverley (680) was commonly reported to have been the first who took the degree of Master of Arts at Oxford. The same writer informs us that this degree had become common in the reigns of John and Richard I. According to Bulæus (*Hist. Univ. Paris,* II. 566, 679, sqq.), academic degrees were first instituted at Bologna. The forms designative of the various orders of academic dignity in that university are stated to have been the Baccalaureatus, Licentiatus, and Doctoratus. Of these, the last two were probably equivalent to the degrees of the master incipient and the magister socius or regent of Paris. Certain stadia, or successive courses of legal study, are said to have been in existence from the time of Justinian. The five years devoted to the acquisition of juristic knowledge were divided into the Anni Justiniani, Edictales, Papinianistæ, Lytæ, and Prolytæ. The student who had passed through all successively was described as a licentiatus, from the circumstance that he was considered qualified to discharge the duties of an antecessor or public professor of this subject. The practice adopted in this respect by the schools of jurisprudence was afterward transferred to theology at Paris by Peter Lombardus. The name Bachelor is supposed by Malden (*History of Universities and Academic Degrees,* p. 23) to have been borrowed from the terminology of the military hierarchy of those ages': see BACHELOR. 'Bachelors are often styled scholars (Wood, *Hist. and Antiq. of Oxford,* I. 59), and the individual invested with this degree was regarded as, at the utmost, an imperfect graduate. At the same time, in accordance with the system of mutual instruction so thoroughly adopted in the schools of the middle ages, the more advanced class of scholars were both encouraged and commanded to perfect their own acquirements, and extend the educational influences of the university into the minutest ramifications of the system by teaching and catechizing the junior members of their own body (Crevier, *Histoire de l'Université de Paris,* II. 160). Bachelors, though thus intrusted with certain tutorial functions, never possessed any of the legislative powers assigned to the masters' (pp. 206,7). It was to the teaching masters—and all who took the master's degree were bound to perform the duties of tuition for a time—that the term regent was applied both on the continent and in Scotland. On retiring from the office of regent, the master—at Paris, at least—ceased to take an active share either in the legislation or the government of the university (Bulæus, par. iii., 420). The question as to whether the institution of teaching masters or regents ought to be revived, to the extent of permitting them to compete on equal terms with the endowed professors, was raised in Scotland some years ago. In the German universities, the Doctor, by a *Habilitation* thesis, qualifies himself to lecture in the university as *privat docent;* and from among the *docents,* the professors are usually chosen. See BACHELOR: MASTER OF ARTS: DOCTOR: REGENT: UNIVERSITY: COLLEGE.

DEGREE, in Music: difference of position or elevation of the notes on the lines and spaces. When notes are on the same line or space, they are on the same degree, even though one of the notes should be raised by a sharp, or lowered by a flat. When two notes follow diatonically, so that one of them is on a line, and the other on the space adjoining, the interval is of one degree. Subtracting one from an interval, gives the degrees which separate the two notes; thus, a third is separated by two degrees; a fourth, by three, etc.

DEGREE OF LATITUDE: space along the Meridian (q.v.) through which an observer must pass to alter his latitude by one degree—i.e., in order to see the same star one degree nearer to or further from the zenith: see LATITUDE. This space must be found by actual measurement; and owing to the earth being an oblate spheroid, and not a sphere, it varies with the place of observation—the degrees being generally longer toward the poles, where the earth is flatter, and shorter at the equator, where the earth is more curved. If the earth were a sphere, a degree would be exactly a 360th part of the meridian. As it is, the length of a degree of latitude depends on the latitude of the place. From a variety of observations conducted at various times and places, from as far back as the time of Eratosthenes (B.C. 250), tables have been constructed showing the length of degrees at different latitudes. The length of 'the middle degree,' as it is called, or that of places in latitude 45°, may be taken approximately at $69\frac{1}{10}$ English miles. The ascertained differences between degrees of latitude is one of the proofs of the earth's spheroidicity. See GEODESY.

DEGREE OF LONGITUDE: space between two meridians that make an angle of 1° at the poles, measured by the arc of a circle parallel to the equator passing between them. It is clear that this space is greatest at the equator, and vanishes at the poles; and it can be shown that it varies with the cosine of the angle of latitude. The annexed table shows the lengths of a degree of longitude for places at every degree of latitude from 0° to 90°: it is computed on the supposition that the earth is a sphere.

Degree lat.	English Miles.	Degree lat.	English Miles.	Degree lat.	English Miles.
0	69.07	16	66.31	32	58.51
1	69.06	17	65.98	33	57.87
2	69.03	18	65.62	34	57.20
3	68.97	19	65.24	35	56.51
4	68.90	20	64.84	36	55.81
5	68.81	21	64.42	37	55.10
6	68.62	22	63.97	38	54.37
7	68.48	23	63.51	39	53.62
8	68.31	24	63.03	40	52.85
9	68.15	25	62.53	41	52.07
10	67.95	26	62.02	42	51.27
11	67.73	27	61.48	43	50.46
12	67.48	28	60.93	44	49.63
13	67.21	29	60.35	45	48.78
14	66.95	30	59.75	46	47.93
15	66.65	31	59.13	47	47.06

Degree lat.	English Miles.	Degree lat.	English Miles.	Degree lat.	English Miles.
48	46.16	63	31.33	77	15.52
49	45.26	64	30.24	78	14.35
50	44.35	65	29.15	79	13.17
51	43.42	66	28.06	80	11.98
52	42.48	67	26.96	81	10.79
53	41.53	68	25.85	82	9.59
54	40.56	69	24.73	83	8.41
55	39.58	70	23.60	84	7.21
56	38.58	71	22.47	85	6.00
57	37.58	72	21.32	86	4.81
58	36.57	73	20.17	87	3.61
59	35.54	74	19.02	88	2.41
60	34.50	75	17.86	89	1.21
61	33.45	76	16.70	90	0.00
62	32.40				

DEGREES OF LAMBETH: degrees granted by the Archbishop of Canterbury. By 25 Henry VIII. c. 21, sundry powers formerly belonging to the pope were conferred upon the Archbishop of Canterbury, among which was the right of granting degrees. He can confer all the degrees taken in the universities of Oxford and Cambridge, but his degrees do not carry with them all the privileges which belong to degrees conferred by the universities.

DEGREES OF NOBILITY: see Nobility.

DEGREES OF RELATIONSHIP : see Consanguinity: Affinity.

DEHISCE, v. *dē-hĭs'* [L. *dehis'cĕrĕ*, to split open, to part asunder—from *de*, down, fully; *hiscĕrĕ*, to gape]: to open or part asunder, as the seed-pods of plants. Dehis'cing, imp. Dehisced', pp. *-hĭst'*. Dehis'cent, a. *-sĕnt* [F.—L.]: opening like the pod of a plant. Dehis'cence, n. *-sĕns* [F.—L.]: a gaping or opening, as of a fruit containing seed.

DEHRA DUN, *dĕ'hra dôn:* district in the Mirat division, N. W. Provinces, British India; bounded n. by the native state of Garhwal, e. by British Garhwal, s. by the Siwálik hills, w. by the states of Sirmur, Jubal, and Taranch; between lat. 29° 57′ and 30° 59′ n., and long. 77° 37′ 15″ and 78° 22′ 45″ e. It comprises the valley (the Dun) of the D., with an area of 673 sq. m., and having the Ganges on the e. and the Jumna on the w., and the hill tract, Jaunsar Bawar, area 343 sq. m. Beside the rivers and their affluents there are five irrigating canals, with a total length of 67 m. which water nearly 11,000 acres. The chief industries are tea-planting and cultivation, rhea cultivation, and recently silk cultivation. Pop. (1872) 116,953.

DEHYDRATE, v. *dē-hī'drāt* [L. *de*, down, from; Gr. *hudor*, water]: in *chem.*, to remove water from. Dehydra'tion, n. *-shŭn*, the act of removing water from.

DEIANEIRA, *dē-ĭ-a-nī'rȧ*, or Dejanira, *dĕj-a-nī'rȧ:* in *Greek mythology*, the daughter of Œneus, King of Calydon, for whom Hercules wrestled with Achelous, the river god, and killed him. Obliged to flee for the homicide, Hercules took D. to Trachis, and while *en route* slew the centaur Nessus, who, dying, persuaded D. that any one to whom she would give a shirt steeped in his blood would love her constantly. When Hercules subsequently took Œchalia and carried off Iole, D., moved either by love or jealousy, gave him a blood-soaked tunic, which poisoned him the moment he put it on.

DEICIDE, n. *dē'ĭ-sīd* [F. *déicide;* It. *deicidio*—from L. *deus*, a god; *cædo*, I kill]: the slaughter or murder of a god—applied to the crucifixion of Christ. **De'iform**, a. *-fawrm* [L. *forma*, shape]: like a god.

DEIFIED, DEIFICATION, etc.: see under **Deify**.

DEIFY, v. *dē'ĭ-fī* [F. *déifier*, to place among the gods—from mid. L. *deificārĕ*—from *deus*, a god; *făciō*, I make]: to exalt to the rank of a god; to reverence or praise excessively; to treat as an object of the highest regard. **De'ifying**, imp. **De'ified**, pp. *-fīd:* Adj. raised to the rank of a deity or god. **Deification**, n. *dē'ĭ-fĭ-kā'shŭn* [F.—L.]: the act of exalting to the rank of a god. **Deif'ic**, a. *-ĭf'ĭk*, or **Deif'ical**, a. *-ĭ-kăl*, divine.

DEIGN, v. *dān* [OF. *deigner;* F. *daigner*, to condescend—from L. *dignārī*, to deem worthy or deserving of—from *dignus*, worthy]: to deem or think worthy; to condescend; in *OE.*, to permit; to allow. **Deign'ing**, imp. **Deigned**, pp. *dānd.*

DEI GRATIA, *dē'ī grā'shĭ-a* [Lat. 'by the favor of God']: formula taken from several apostolical expressions in the New Testament. It is believed to have been formally used first by the bishops at the council of Ephesus, 431. Afterward, it came to be appended by archbishops, bishops, abbots, abbesses, deans, monks, and even chaplains, to their titles, in letters and other documents, as an expression of dependence on the Most High. After the middle of the 13th c., when the sanction of the pope began to be considered necessary to ecclesiastical offices, the higher clergy wrote *Dei et Apostolicæ sedis gratiâ*, 'by the favor of God and the apostolic see.' At a later period, many of them preferred to write *miseratione divinâ, permissione divinâ*, and the like; but they still continue to be styled by others *Dei gratiâ.* In the British Islands this style was generally dropped about the time of the Reformation, but it was occasionally given to the archbishops of Canterbury and York, even after the beginning of the 17th c. Beginning with the times of the Carlovinginians, many temporal princes, earls, and barons made use of the formula Dei gratiâ; and before the 15th c., no idea of independence or of divine right seems to have attached to it. But in 1442, King Charles VII. of France forbade its use by the Comte d'Armagnac, and in 1449 obliged the Duke of Burgundy to declare that he used it without prejudice to the rights of the French crown. These instances show that it had then begun to be regarded as belonging exclusively to sovereigns who owed no allegiance to any other earthly potentate or power. In this way, what was originally a pious expression of humility, came to be looked upon as an assertion of the doctrine of the 'divine right' of kings.

DEILEPHILA, n. *dī-lĕf'ĭl-a* [Gr. *deilē*, the afternoon, the evening; *phileō*, I love]: genus of *Sphingides* (hawk-moths). *D. Elpenor* is the Elephant Hawk-moth.

DEINOCERATA, or DINOCERATA, n. plu. *dī'nō-sĕr'ă-tă* [Gr. *deinos*, terrible; *kĕrătă*, horns]: in *geol.*, an extinct order of Tertiary mammals.

DEINICHTHYS: see DINICHTHYS.

DEINORNIS: see DINORNIS.

DEINOSAURIA: see DINOSAURIA.

DEINOTHE'RIUM: see DINOTHERIUM.

DEIPAROUS, a. *dē-ĭp'ă-rŭs* [L. *deus*, a god; *părĭō*, I bring forth]: bringing forth a god, applied to the Virgin Mary.

DEISM, n. *dē'ĭzm* [F. *déisme*, deism—from L. *deus*, a god: comp. Gael. and Ir. *dia;* W. *duw*, God]: the belief of those who admit the existence of one God, but who generally deny revelation; the belief in natural religion only. DE'IST, n. *-ĭst*, one who believes in one God, but not in revelation; a theist. DEIS'TIC, a. *-tĭk*, or DEIS'TICAL, a. *-tĭ-kăl*, pertaining to deism. DEIS'TICALLY, ad. *-lĭ*. DEITY, n. *dē'ĭ-tĭ* [OF. *deite*—from L. *dĕĭtātem*, a deity]: the Supreme Being; God; a heathen god; an idol.—SYN. of 'deist': infidel; unbeliever; freethinker; skeptic.

DE'ISM: properly, belief in a God, as opposed to atheism; but to express this sense, *Theism* (q.v.) is the term now used. On the other hand, Deism is generally understood to imply the denial of a revelation; and a Deist is one who holds the existence and providence of God, but grounds his belief on reason and evidence, rejecting the authority of the Scriptures as a divine revelation. The name has been often used vaguely by way of reproach, as equivalent to 'infidel'. It is seldom applied to persons of the present day, having given place to such terms as rationalist, free-thinker, liberal; since these are preferred by thinkers of this school.

The term Deists, or Free-thinkers, is sometimes used to designate a school or series of writers who appeared in England in the 17th and 18th c., and who aimed at establishing what they called Natural Religion, upon the basis of reason and free inquiry, and then bringing all positive or revealed religion to the test of this. They are looked upon as the precursors of German Rationalism in theology. The leading names in this school are Lord Herbert of Cherbury (died 1648); John Toland, whose *Christianity not Mysterious* (Lond. 1696) gave exact expression to the tendency of the Deists; Lord Shaftesbury; Anthony Collins (died 1729), the friend of Locke; Thomas Woolston; Matthew Tindal, the author of *Christianity as Old as the Creation, or the Gospel a Republication of the Religion of Nature* (Lond. 1730); Viscount Bolingbroke (died 1751). See these titles. In the United States, Thomas Paine (q.v.), of lower literary grade and less philosophical in thought than the writers above named, was the most popular Deist of the 18th century.

DEJECT, v. *dĕ-jĕkt'* [L. *dejectus*, thrown or cast down—from *de*, *jactus*, thrown]: to cast down, to depress the spirits; to dishearten; to cause to look sad. **DEJEC'TING**, imp. **DEJEC'TED**, pp.: ADJ. cast down; low-spirited. **DEJEC'TEDLY**, ad. -*lĭ*. **DEJEC'TEDNESS**, n. the state of being cast down; lowness of spirits. **DEJEC'TION**, n. -*jĕk'-shŭn* [F.—L.]: a casting down; melancholy; depression of mind; lowness of spirits caused by misfortune, etc. **DEJEC'TORY**, a. -*tėr-ĭ*, having power or tendency to cast down; tending to promote evacuation by stool.—SYN. of 'dejected': sad; gloomy; mournful; melancholy; moody.

DÉJEÛNE, n. *dā-zhŏn'*, or **DÉJEÛNER**, n. *dā'zhŏ-nā'* [F. *déjeûner*, to breakfast]: a breakfast or lunch, generally of a public or ostentatious character.

DE JURE: see DE FACTO.

DE KALB, *de kălb*, JOHN, Baron: 1721, June 29—1780, Aug. 19; b. Alsace: general in American revolution. He received a military education in France, became an officer in the French army, was a confidential agent of the govt. to the American colonies, was engaged by Silas Deane to serve in the patriot army, accompanied Lafayette to America 1777, and was soon afterward appointed a maj.gen. by congress. He served under Washington at Philadelphia, Valley Forge, and in N. J. and Md ; was sent to relieve Gen. Lincoln in the siege of Charleston 1780, Apr.; and as second in command in Gen. Gates's army headed the Md. and Del. troops in the battle of Camden, S. C., 1780, Aug. 16, and maintained his position against Cornwallis till he fell wounded in 11 places. He died 3 days after the battle. On the 106th anniversary of the battle a bronze statue of Gen. De K., ordered by congress, was unveiled at Annapolis.

DEK'KER, THOMAS: English dramatist: b. in the latter part of the 16th c.; d. about 1638. He is said to have written upward of 20 plays, either wholly or in part. In company with Ben Jonson, he wrote for the Lord Admiral's Theatre; the two dramatists, however, afterward quarrelled. D'.s chief plays are *Fortunatus, or the Wishing-cap*, and *The Honest Whore*. Hazlitt said of the latter that it unites 'the simplicity of prose with the graces of poetry.' His poetic diction is choice and elegant, but he often wanders into absurdity. His life, like that of many of his contemporaries, seems to have been one of alternate revelry, want, and despair. Recently, D. has become better known by the re-issue of his *Gull's Hornbook* (not a play), which is full of interesting details of the manners of his time.

DEL, *del* (*Artocarpus pubescens*): tree of the same genus with the Bread-fruit (q.v.), indigenous to the forests of Ceylon, and valuable for its timber, which is used both for house-carpentry and for ship-building.

DE LA BECHE, *dĕh lâ bāsh*, Sir HENRY THOMAS: 1796 -1855, Apr. 11; b. near London: geologist. He was educated at the military school at Great Marlow, and entered the army 1814. Three years later, he became a fellow of the Geological Soc., of which he was afterward secretary, and eventually pres., 1847. In 1823, in conjunction with the Rev. Mr. Conybeare, he issued a paper, *On the Discovery of a New Fossil Animal, forming a Link between the Ichthyosaurus and the Crocodile:* this was the Plesiosaurus. In 1824, De la B. visited Jamaica and applied himself to its geology, and in two years published a paper on that subject. On his return to England, he wrote a variety of scientific papers, among which are the following: *On the Excavation of Valleys, On the Geographical Distribution of Organic Remains,* and *Geological Manual* (1831). He then began a geological map of England, and the government approving his design, instituted the Geological Survey, and placed him at its head. In 1848, he received the honor of knighthood; in 1851, he published the *Geological Observer,* with upward of 300 wood-cuts; and in 1853, was elected a corresponding member of the Acad. of Sciences of Paris.

DELABECHEA, n. *dĕ-la-băsh'ē-a* [named after the eminent geologist, *De la Beche*]: genus of *Sterculiaceæ. D. rupestris* is the bottle-tree, which grows in the n.e. parts of Australia. The gum, which resembles tragacanth, is eaten by the natives in times of scarcity.

DELACROIX, *dĕh-lâ-krwâ',* FERDINAND VICTOR EUGENE: French painter, chief of the 'romantic school': 1799, Apr. 26—1863, Aug. 13; b. Charenton-Saint-Maurice, near Paris. At the age of 18, he entered the *atelier* of the artist Pierre Guérin. In 1822, he exhibited his first work, *Dante and Virgil.* It attracted much attention. The love of color, at the expense of accurate drawing, for which D. afterward became conspicuous, is quite visible in it. It was highly praised, however, by M. Thiers among others. In 1824, D., then at the head of the new school of young painters, produced the *Massacre of Scio;* in 1826, the *Death of Marino Faliero,* and *Greece on the Ruins of Missolonghi;* in 1827, *Christ in the Garden of Gethsemane, Appearence of Mephistopheles to Faust, The Blind Milton Dictating Paradise Lost,* and the *Death of Sardanapalus;* and in 1828, *Cardinal Richelieu.* The July revolution left its impress on D., and in 1831 appeared his *Liberty directing the People on the Barricades.* About this time, he made a voyage to Morocco, where he familiarized himself with novel effects of light and costumes. The Paris Exhibition of 1852 contained the results of his artistic expedition. After this, his principal pictures were: the *Prisoner of Chillon* (1835); *Cleopatra* (1838); *Hamlet Contemplating the Skull of Yorick* (1838); *Capture of Constantinople by the Crusaders* (1841; a *Shipwreck* (1841), *Death of Marcus Aurelius* (1845); *Farewell of Romeo and Juliet* (1846); and *Flower and Fruits* (1849). D. decorated many public buildings and churches. In 1857 he was chosen by the Institute to fill the place of Paul Delaroche (q.v.).—The most striking quality of D.'s genius is versatility. As a colorist, he ranks high, but is almost equally noted for incorrect drawing. His pictures are attractive, with a certain dramatic energy of execution, and brilliant effects of light and shadow. He has been compared to Paolo Veronese and Rubens, but is vastly inferior to both: he has been styled also the *Victor Hugo* of painting, a criticism which more nearly expresses the truth.

DELAFIELD, *dĕl'a-fēld*, RICHARD, U.S.A.: 1798, Sep. 1—1873, Nov. 5; b. New York: engineer. He graduated at the U. S. Milit. Acad. at the head of his class 1818, was appointed 2d. lieut. of engineers, promoted 1st. lieut. 1820, capt. 1828, maj. 1838, lieut col. 1861, col. 1863, brig. gen, and chief of engineers 1864, and brevetted maj.gen. 1865, and was retired 1866. He was on surveying duty with the n. boundary commission 1818, employed in the construction of fortifications at Hampton Roads, on the Mississippi, Del. river and bay, New York harbor, and in Tex. 1819–38 and 1846–64, supt of the U. S. Milit. Acad. 1838–45 and 1856–61, pres. of the milit. commission to the Crimea 1854–56, on the staff of Gov. Morgan of N. Y. 1861–63, commander of the corps of engineers and inspector of U. S. Milit. Acad. 1864–66, member of lighthouse board and of the commission for the improvement of Boston harbor 1864–70, and regent of the Smithsonian Institution 1865–70.

DELAGOA BAY, *dĕl-a-gō'a:* inlet on the s.e. coast of Africa; lat. 25° 58′ s., and long. 33° e; about 55 m. in length, 20 in breadth. Into D. B. many rivers fall, among which are the Delagoa, from the w., which gives its name to the bay; the Manice, from the n.; and the Machavanna, from the south. The shores of the bay being flat and marshy, are unhealthful in summer; the anchorage, however, is commodious and safe, and attracts many whalers. The Portuguese have a small fort here, whence they export ivory and gold-dust. Like most of the Portuguese possessions in Africa, D. B. lies out of the thoroughfares of the world's traffic. See LOURENZO MARQUEZ.

DELAINE, n. *dĕ-lān'* [F. *de*, from, *laine*, wool]: lady's dress-goods with a cotton chain, woolen filling, untwilled. It is dyed, figured in the loom, or printed. All-wool delaines are similar, excepting that the chain is of wool.

DELAMBRE, *dĕh-lŏng'b'r.* JEAN BAPTISTE JOSEPH: 1749, Sep. 19—1822, Aug. 19; b. Amiens: French astronomer. He studied first under Delisle, afterward under Lalande. The discovery of the planet Uranus, 1781, gave him the first opportunity of attracting the attention of the learned world in general. He formed tables of its motion, which obtained the annual prize of the Acad. of Sciences. Soon he commenced the construction of new solar tables, and later, tables of the motions of Jupiter and Saturn. With Méchain, he was appointed by the French govt., 1792, to measure the arc of the meridian between Dunkirk and Barcelona, which was completed 1799. Afterward, he was elected member of the Academy. In 1802, he was appointed inspector-gen. of education, and in 1803, perpetual sec. of the mathematical section of the Institute. The result of his measurements appeared in his great work, *Base du Système Métrique Décimal* (1806–10). In 1807, he obtained the chair at the College of France, vacant by the death of Lalande, his master and friend. In 1814, he was appointed a member of the council of public instruction. D. received a multitude of honors. He was a member of most of the learned bodies in Europe, an officer of the Legion of Honor, and a chevalier of the order of St. Michael. His writings are very numerous. The principal are: *Traite d'Astronomie* (Paris 1814); *Histoire de l'Astronomie du Moyen Age* (Paris 1819); *Histoire de l'Astronomie Moderne* (1821); and *Histoire de l'Astronomie au Dix-huitième Siècle* (Paris 1823–27). published under the care of Matthieu. D. wrote several excllent *Memoires.* He died at Paris.

DE LANCEY, *de lăn'sĭ*, JAMES: 1703, Nov. 27—1760, July 30; b. New York: lawyer. He was educated at Cambridge, England, and admitted to the bar at the Inner Temple, London. Returning to New York, he was appointed a member of the council 1729, second judge of the supreme court 1731, and chief justice 1733, and held the last office till death. He was commissioned lieut.gov. of the province 1747, presided over a congress to conciliate the Indians 1754, granted the charter of King's (now Columbia) College 1754, and was acting gov. from 1757 till his death.

DE LAN'CEY, WILLIAM HEATHCOTE, D.D., LL D.: 1797, Oct. 8—1865, Apr. 5; b. Mamaroneck, N. Y.: Prot. Episc. Bp. He graduated at Yale College 1817, studied theol. with Bp. John Henry Hobart, was ordained deacon 1819 and priest 1822, appointed asst. to Bp. White of Philadelphia 1822, elected sec. of the diocesan convention of Penn. and also of the house of bps. 1823, was provost of the Univ. of Penn. 1827–33, asst. minister, St. Paul's Church, Philadelphia, 1833–36, rector 1836–39, and elected bp. of the newly organized Prot. Episc. diocese of Western N. Y. and consecrated at Auburn, 1839, May 7. In 1852 he visited London as delegate of the house of bps. to the anniversary celebration of the Soc. for the Propagation of the Gospel in foreign parts, and while there assisted in the services in St. Paul's and Westminster Abbey and at the consecration of an English bp., both acts being the first on the part of an American bp. He received the degree D.D. from Yale College 1827, and D.C.L. from the Univ. of Oxford 1852.

DELANE *de-lān'*, JOHN THADDEUS: editor of the London *Times:* 1815–1879, Nov. 22; b. London; son of William Augustus Frederick D. (1793–1857), for many years manager of the *Times.* He studied in a private seminary, first in England, afterward in France. He then went to Oxford, where he entered himself of Magdalen Hall. His father being manager of the *Times*, he was at a very early age introduced into the editor's room, and on the death of Mr. Barnes, 1841, succeeded to the direction. Under his editorship, the *Times* attained a prodigious circulation, and an influence unparalleled in the history of journalism. The division of labor in newspapers being more complete than in the days of his predecessors, the duty of the modern editor is not so much to write in his own journal, as to suggest topics to others; to revise and bring into harmony conflicting contributions; to make arrangements for the prompt and punctual supply of the news of the day (in which he is assisted by the manager); and, before putting the journal to the press, to decide which of many competing articles and reports shall be inserted, and which rejected or postponed. These duties require great tact, quickness of decision, extensive knowledge of men and things, literary taste and ability, and, in the case of a journal which claims to be the representative of the English nation, a ready discrimination of those straws on the surface which denote the ultimate direction of public feeling. He resigned the editorship 1877, after 36 years of continuous labor.

DE LA RIVE, *dĕh lâ rēv'*, AUGUSTE, D.C.L.: 1801, Oct. 9—1873, Nov. 28; b. Geneva: Swiss scientist. He inherited his taste for natural science from his father, a noted physician and chemist; received a thorough education, and when 22 years old was appointed prof. of natural philosophy in the Acad. of Geneva. His observations while experimenting to ascertain the temperature of the earth's crust formed the basis of Poisson's calculations; he made numerous discoveries in electrical science, formulated a theory of the phenomenon of the aurora borealis which met with much favor, discovered the process of electro-gilding for which he received the grand prize of the Acad. des Sciences 1842, published a complete treatise on electricity which attained wide circulation and high praise 1853–58, and received the high honor of a nomination as one of the eight foreign associates of the French Acad. 1864. He received the degree D.C.L. from the Univ. of Oxford, 1860.

DELAROCHE, *d'lâ-rosh'*, PAUL: historical painter, head of the modern 'Eclectic' school of art in France: 1797–1856, Nov. 4; b. Paris. He became a pupil of Baron Gros, and 1819-23 acquired some note by painting subjects from Scripture, but first excited public admiration, 1824, by his *St. Vincent de Paul preaching in the Presence of Louis XIII.*, and *Jeanne d'Arc interrogated in Prison by Cardinal Beaufort.* These show the earliest indications of that style for which he afterward became famous—a style which endeavored to unite the picturesqueness of the romantic with the dignity of the classic school of art. In 1826, D. produced his *Death of President Durante;* and in 1827, his *Death of Queen Elizabeth.* These pictures greatly increased his reputation, though the last is reckoned a failure by English critics. In 1831, appeared his *Children of Edward IV. in the Tower*, a work of very high merit, but surpassed by his *Cromwell contemplating the Corpse of Charles I.* (1833), generally regarded as one of the first historical paintings of modern times. Both are well known through the medium of engravings. In 1834, appeared his *Execution of Lady Jane Grey;* and in 1837, his *Charles I. in the Guard-room Insulted by the Parliamentary Soldiers*, and his *Lord Strafford on the Way to Execution receiving the Blessing of Abp. Laud.* From this period until 1841, he was engaged on what is probably his grandest work—the series of paintings executed on the wall of the semicircular saloon of the École des Beaux Arts. This composition contains 74 figures, comprising the greatest sculptors, painters, and architects in all history, according to D.'s judgment. The style is simple, lofty, and chaste. Among his later works are: *Bonaparte at St. Bernard* (1850), *Marie Antoinette before the Revolutionary Tribunal* (1851), *Moses Exposed* (1852) *Calvary* (1853), *Jesus in the Garden of Gethsemane* (1854), *The Girondins in the Concierge* (1856). The characteristic excellences of D. are delicacy of treatment, picturesqueness of conception, harmony of color, and accuracy of drawing. He has been accused, however, of want of fire, imagination, and depth, and it must be admitted that he rarely, if ever, manifests the highest creative genius. D. was named a member of the Institute in 1832, and prof. of painting in the École des Beaux Arts 1833.

DELATION, n. *dĕ-lā'shŭn* [L. *delātĭōnem*, an accusation]: act of charging with a crime; accusation by an informer.

DELAUNAY, *dĕh-lō-nā'*, CHARLES EUGENE: 1816, Apr. 9—1872, Aug. 5; b. Lusigny, France: astronomer. He graduated at the Polytechnic School, Paris, as an engineer and with the first Laplace prize, 1835; was appointed tutor there 1841 and prof. of mechanics 1853; became a member of the Institute and the Acad. des Sciences 1855, and of the Royal Astronomical Soc. of London, 1869, from which he received a medal 1870, officer of the Legion of Honor, director of the national observatory, 1870, and prof. of astronomy and geology at the Polytechnic, 1871. He published several astronomical works, of which *Théorie du Mouvement de la Lune*, 2 vols. 4to (Paris 1866–7), is most noted.

DELAVAN, *dĕl'a-van*, EDWARD CORNELIUS: 1793–1871, Jan. 15; b. Schenectady co., N. Y.: reformer. He was a wine merchant in early life, acquired a large amount of real estate in Albany, erected the D. house, which was conducted many years as a temperance hotel, and was one of the founders of the State Temperance Soc., 1828. From that time he applied a large part of his time and wealth to that cause, speaking, writing, lecturing, conducting experiments, publishing a considerable amount of material in its interest, and chiefly supporting an aggressive periodical. He collected specimens of conchology and mineralogy, and presented cabinets valued at $30,000 to Union College, Schenectady.

DELAVIGNE, *d'lâ-vēñ'*, JEAN FRANÇOIS CASIMIR: 1793, Apr. 4—1843, Dec. 10; b. Havre: French poet and dramatic writer. He was educated at the Lycee Napoléon in Paris, where he attracted notice by his poem on the birth of the 'king of Rome' 1811. A few years after the fall of Napoleon, he published his *Messéniennes*, a series of patriotic elegies, in which he bitterly deplored the misfortunes brought upon his country by the disaster of Waterloo. The July revolution inspired his song *La Parisienne*, set to music by Auber, and he wrote several other revolutionary lyrics, such as *La Varsovienne, ou la Polonaise*, and

La Bruxelloise. Many offers of employment in political affairs were made to him by Louis Philippe, but he chose to remain a *littérateur*, and worked assiduously at the composition of plays. His incessant labors at length undermined his health, and he retired to Lyon for change of air, where he died. D is, next to Béranger and Scribe, the most popular of recent French poets. He represents that 'golden mean' of the French Parnassus, the half-classic, half-romantic style of poetry. There is nothing extravagant, nothing profound about him, Easily comprehended, moderately liberal, with a slight tincture of skepticism and Voltairian wit, yet, on the whole, rather moral in his tendencies, D. was just the man to charm the more elegant and decorous circles of Parisian society. His language, too, is piquant, picturesque, and select, and skilfully conceals the lack of poetic substance. The titles of his principal dramatic pieces are—*Les Vêpres Siciliennes* (1819), *Les Comédiens* (1820), *Marino Falieri* (1829), *Louis XI.* (1832), *Les Enfants d'Edouard* (1833), *Don Juan d'Autriche* (1835), and *La Fille du Cid* (1839). Several editions of his works have been published, the first in 1845, containing a biography of D. by his brother Germain, and a panegyric by Sainte-Beuve.

DELAWARE, *dĕl′a-wär:* state, one of the 13 original states of the American Union; bet. lat. 38° 28′ and 39° 50′ n. and long. 75° and 75° 46′ w.; bounded on the n. and n.n.w. by Penn., e. by D. river and bay and the Atlantic Ocean, s. and w. by Md.; area 1,960 sq. m.; extreme length 96 m., breadth at n. 36 m., at s. 10 m. It ranked among the states (1888) 37th in population and area, 35th in value of agricultural products, 28th in value of manufactures, 6th in oyster fisheries, 5th in ship-building, and 4th in fruit-growing.

Topography and Geology.—The surface of D. in the main is level. There are no mountains. The n. has numerous hills and dales notable for picturesque scenery, and the s. a sandy table-land at no part exceeding 70 ft. in elevation, which forms the only watershed of the peninsula. There are many marshes and swamps in the s., of which the chief is the Cypress Swamp, 12 m. long, 6 m. wide, and abounding in valuable cypress, cedar, and other timber. The coast-line is dotted with salt marshes and lagoons; the interior has a light, rich soil adpated to general agricultural products and the cultivation of a large variety of fruits. Besides the D. river and bay the water-courses include the Choptank, Nanticoke, Pokomoke, Appoquinimink, Duck, Jones', Murderkill, Mispilion, Broadkill, and Indian rivers and Brandywine and Christiana creeks. The D. river and bay and Christiana creek are navigable for large steamers, and most of the others for only light-draught vessels. D. has three landlocked sounds, Rehoboth Bay, navigable for vessels drawing 6 ft. of water; Indian River Bay, and St. Martin's Bay. The chief harbors are Wilmington, Newcastle, and Lewes. At Lewes the U. S. govt. has constructed a notable breakwater nearly 3,000 ft. long, with an ice-breaker 1,500 ft. long, to afford a harbor of refuge for vessels, at a cost of $2,123,505. The n. portion of the state is of cretaceous formation, the central tertiary, and the s. post-tertiary or alluvial. Chalybeate waters abound in the n.; there is a deposit of kaoline of fine quality 2 m. long and ¾ m. wide; and bog-iron ore, greensand, and shell marl are found in paying quantities in various sections.

Climate.—The climate is mild and healthful, excepting in the region of the swamp, where intermittent and remittent fevers prevail. The temperature in the vicinity of the breakwater ranges from 30° to 38° F. in winter and 69° to 74° in summer, and the rainfall averages 50 inches.

Zoology.—D. is quite free from wild animals, though a considerable variety of reptiles, many very venomous, are found in the marshes and swamps, and the abundance of ducks, teal, and wild geese has made the shores of D. Bay a favorite resort for hunters.

Agriculture.—In 1880 there were 6,658 farms in the state, of which 5,041 were occupied by their owners, and the rest rented. These contained 1,090,245 acres, valued at $36,789,672. The chief products (1885) were: corn, acres 216,595, bushels 4,174,000, value $1,669,600; wheat, acres 89,103, bushels 957,000, value $909,150; oats, acres 21,197, bushels 501,000, value $190,380; rye, acres 857, bushels 6,000, value $4,500; buckwheat, acres 437, bushels 5,000, value $2,732;

potatoes, acres 4,141, bushels 315,000, value $157,358; hay, acres 49,628, tons 44,665, value $647,643. In 1887 there were 60,000 persons residing on farms and engaged in various agricultural pursuits, who owned live-stock valued at $4,000,000. The principal fruits are peaches, of which the yield is from 3,000,000 to 4,000,000 baskets per year in favorable seasons, valued at over $1,500,000, and apples, pears, quinces, and grapes, which in aggregate value generally exceed that of the peach crop.

Manufactures.—D. had 1880, 746 manufacturing establishments, employing 12,638 hands, using a capital of $15,655,822, paying in wages $4,267,349, consuming materials valued at $12,828,461, and yielding products valued at $20,514,438. There were 81 flour and grist mills, 33 canning and preserving establishments, 18 ship-building yards, and 86 saw-mills. The chief industry, according to the amount of capital employed, was the manufacture of paper, which represented a capital of $2,508,000, paid in wages $112,666, consumed material valued at $582,154, and yielded a product valued at $737,905. Next was the manufacture of iron and steel, with capital $1,431,469, wages $344,476, material $1,214,050, and product $2,347,177. Then followed gunpowder, capital $1,000,000, wages $117,778, material $127,586, product $243,565; ship-building, capital $935,200, wages $900,322, material $964,275; product $2,162,503; cotton goods, capital $929,570, wages $232,727, material $632,205, product $1,057,756; leather, capital $926,500, wages $388,064, material $1,350,860. product $1,886,597; foundries and machine-shops, capital $788,100, wages $266,618, material $330,732, product $704,225; flour and grist mill products, capital $761,015, wages $72,231, material $1,165,103, product $1,341,026.

Fisheries.—The sea-fisheries employed $268,231 in capital, 1,449 persons, and had a product valued at $309,020, and the oyster fisheries $145,500 capital, 1,065 persons, and $687,725 product: total, capital $413,731, persons 2,514, product $996,745. The oyster industry alone had 365 vessels and boats.

Commerce.—D. is credited with but a small portion of its actual import and export trade, as the larger portion passes first through Philadelphia or Baltimore. Wilmington is the port of the D. district, and its custom-house reported 1880, exports $270,309, imports $7,773, registered vessels of all kinds 182, tonnage 16,287. The port has direct connection with New York by steamships, and with various parts of the state and its vicinity by smaller steam and sailing vessels.

Railroads and Canals.—There were 315 m. of railroads in operation in the state 1885. The principal ones lying wholly or partly within the state were the Philadelphia Wilmington and Baltimore; D. New Castle and Frenchtown; Junction and Breakwater; Md. and D.; D. Western; Wilmington and Northern Penn.; Penn. and D.; Smyrna and D. Bay; Dorchester and D.; and Kent County. Trunk lines connecting with Baltimore, Washington, and the leading southern cities cross the n. portion of the state. The capital stock of the state roads proper was $7,062,164, funded debt $1,900,000; total investment $9,017,390.

Religion.—There were over 300 churches in D. 1887, divided denominationally according to membership among the Meth. Episc., Pres., Prot. Episc., Bap., Rom.Cath., Friends, and Lutherans. The Meth. Episc. had 81 ministers, 209 local preachers, 220 churches of an estimated value of $309,895, 226 Sunday schools with 13,036 scholars, and 16,785 members. D. conference embraces the Philadelphia, Dover. Chestertown, and Salisbury districts. The Prot. Episc. had 28 ministers, 29 parishes, 38 churches and chapels, 1,790 Sunday-school scholars, and 2,055 communicants. D. constitutes a Prot. Episc. diocese. The Bap. had 8 ministers, 12 churches, 15 Sunday-schools with 2,118 scholars, and 1,682 members. The Rom. Cath. diocese of Wilmington embraces the state of D. and the e. shores of Md. and Va., with an estimated Rom. Cath. population of 15,000. There were in D. 15 priests, 17 churches, 6 institutions, and 8 parochial schools.

Education.—For many years the educational system of D. was inadequately arranged and supported; there were neither state nor co. supts., and each school dist. managed its schools after its own plan. The voters of each dist. met annually, elected one member of a school committee to serve three years, and decided how much money should be raised for school purposes for the ensuing year, and whether it should be raised by taxation or subscription. The law made it obligatory upon all districts desiring to share in the distribution of the state school fund to raise a specific sum annually either by taxation or subscription, and limited the expenditures to $400 annually for the support of the schools and $500 for the erection and repair of school-houses. Under this system the advantages of the schools were confined to white children, no provision being made for the education of colored children. In 1871 a charitable organization was formed for the express purpose of promoting the moral improvement and education of the colored people, and within a year it had 20 schools in operation with 1,040 pupils, and an average daily attendance of 800. Subsequently the legislature authorized the appointment of a supt. of public schools and an assist. supt. for each co., and a state board of education. The system was conducted by these agencies till 1887, when the offices of state supt. and assist supts. were abolished, and an independent supt. for each co. substituted. The school districts then numbered 422, schools 562, white children between the ages of 6 and 21 years 36,468, colored children outside of Wilmington 5,750, white children enrolled 29,421, colored children enrolled 3,563, teachers including Wilmington schools 635, colored schools outside Wilmington 70, colored children in attendance 3,347. The school fund is derived from the income of the state's share of the surplus revenue distributed by the federal govt., and from a variety of licenses and fees; the state has also received a congressional grant of 90,000 acres of land toward establishing an agricultural college. There are at Wilmington a state normal univ. organized 1866, a Wesleyan college for girls, organized 1839, Rugby Acad., a boys' high school, and a girls' high school. The D. State College at Newark was organized 1870. It received the congressional grant, and has a separate classical, normal, scientific, literary, and agricultural course, to which both sexes are admitted. There is an acad. of the Meth. Episc. conference at Dover, seminaries at Frederica and Felton, and academies at Georgetown, Lewes, Middletown, Milford, Milton, Smyrna, and Wyoming. The Rom. Cath. church has a male and a female orphan asylum, an acad., and five schools in Wilmington. One of the latter, St. Paul's, under charge of the sisters of St. Francis, has 500 pupils, and another, St. Mary's, has 350; there is also a large parochial school at Brandywine.

Finances and Banking.—The nominal state debt, 1887, Jan. 1, was $824,750, which was offset by interest-bearing investments aggregating $1,168,799. There were 17 national banks with a capital of $2,083,985, 5 state banks, capital $980,000, 3 private banks, and one trust and deposit company.

History.—The state received its name from the bay and river. The former was discovered by Hendrick Hudson 1609, accidentally visited by Lord De la Warr 1610, and settled by the Dutch near Lewes 1630, after a considerable purchase of land from the Indians the previous year. In 1633 the Indians destroyed the colony; in 1637 Swedes and Finns bought all the land between Cape Henlopen and Christiana Creek, built a fort. and founded the colony of New Sweden; the Dutch of New Amsterdam claimed the country by right of discovery, and built a fort at Newcastle; in 1654 the Swedes captured the Dutch fort; and in 1655 the Dutch captured the Swedish forts and expelled all colonists who refused to become subject to Holland. The Dutch remained in undisturbed possession till 1664, when a conflict arose between the Duke of York and Lord Baltimore for possession of the country on the w. side of the river excepting the parts already settled. When William Penn examined his grant of Penn., he became anxious also to possess all the territory w. of the D. river as far as the sea. Negotiations with the Duke of York resulted in his releasing to Penn all his title and claim to a tract 12 m. sq., in the centre of which was Newcastle, and also to the territory lying between this concession and the sea. Penn formally took possession of the country 1682, Oct., and when Lord Baltimore persisted in claiming the territory, Penn appealed to England, to the lords of trade and plantations, who decided in his favor 1685. Penn subsequently effected an amicable settlement wtth Lord Baltimore by a compromise. From 1685 till 1703 the territory was considered a part of Penn., and officially known as 'the counties of Newcastle, Kent, and Sussex, upon Delaware.' In the latter year the cos. were permitted a partial separation from Penn., and a district assembly, though they remained under the jurisdiction of the proprietary govs. of Penn. till the beginning of the revolutionary war. In 1776 the people organized an independent state govt., and adopted a constitution which was superseded 1792 by a second, and that, amended 1831, is still the fundamental law. D. was the first state to ratify the federal constitution, 1787, Dec. 7, bore an efficient part in the French and revolutionary wars; and in the civil war, though a slave state, remained loyal to the Union, and furnished to the federal armies 7 regts. of infantry, one regt. of cavalry, and one battery, or 12,284 men—a greater number of soldiers in proportion to the population than was raised by any other state.

Government.—The executive authority is vested by the constitution in a gov., elected for 4 years and ineligible for a second term, salary $2,000 per annum; the legislative in a general assembly comprising a senate of 9 members, 3 from each co., elected for 4 years, and a house of representatives of 21 members, 7 from each co., elected for 2 years, salary $3 per diem and mileage; and the judicial in a superior court, court of general sessions, court of oyer and terminer, court of errors and appeals, orphans' court, and probate courts. Judges are appointed by the gov. virtually for life; salaries, chief-justice and chancellor $2,500 each per annum, three associate-justices, $2,200 each. The state officers include sec. of state, 4 years, $1,000 per annum; treas., 2 years, $1,450; auditor, 2 years, $700; adj.-gen., 4 years, $200; atty. gen., 5 years, $2,000; state librarian, 2 years, $450. No minister of the gospel can hold any civil office in the state. Minor crimes are punishable by the public pillory and whipping-post.

The successive govs. with their terms of office since 1789, when D. was first governed independently of Penn., are as follows: Joshua Clayton, 1789–96; Gunning Bedford, 1796–7; Daniel Rogers, 1797–8; Richard Bassett, 1798–1801; James Sykes (act'g), 1801–2; David Hall, 1802–5; Nathaniel Mitchell, 1805–8; George Truett, 1808–11; Joseph Haslett, 1811–14; Daniel Rodney, 1814–17; John Clarke, 1817–20; Jacob Stout (act'g), 1820–1; John Collins, 1821–2; Caleb Rodney (act'g), 1822–3; Joseph Haslett, 1823–4; Samuel Paynter, 1824–7; George Poindexter, 1827–30; David Hazzard, 1830–3; Caleb P. Bennett, 1833–7; Cornelius P. Comegys, 1837–40; William B. Cooper, 1840–4; Thomas Stockton, 1844–6; Joseph Maul (act'g), 1846; William Temple, 1846; William Thorp, 1846–51; William H. Ross, 1851–5; Peter F. Causey, 1855–9; William Burton, 1859–63; William Cannon, 1863–5; Gove Saulsbury, 1865–9; James Ponder, 1869–75; John P. Cochran, 1875–9; John W. Hall, 1879–83; Charles C. Stockley, 1883–7; Benjamin T. Biggs, 1887–91.

Counties, Cities, and Towns.—D. is divided into 3 cos., Newcastle in the n., Kent in the centre, and Sussex in the s., and these are subdivided into what are locally called hundreds. In 1880 Newcastle co. had a pop. of 77,716, and its co. town Wilmington, 42,478; Kent co. had pop. 29,804, and its town Dover, 2,811; Sussex co. had pop. 36,018, and its town Georgetown, 895. The capital is Dover; other chief towns were Newcastle, Smyrna, Lewes, D. City, Newark, Seaford, Laurel, Middletown, and North and South Milford.

DELAWARE.

Politics.—State elections are held annually. Since 1820 D. has had 3 electoral votes, and since 1828 has chosen her presidential electors by popular vote. Her votes for pres. and vice-pres. have been as follows: 1789, Washington and Jay; 1792, Washington and John Adams; 1796, John Adams and Thomas Pinckney; 1800, John Adams and Charles C. Pinckney; 1804, Charles C. Pinckney and Rufus King; 1808, Charles C. Pinckney and Rufus King; 1812, De Witt Clinton and Jared Ingersoll; 1816, Rufus King and Robert G. Harper; 1820, James Monroe and Daniel Rodney; 1824, Pres. William H. Crawford 2, John Q. Adams 1, Vice-pres. Henry Clay 2, John C. Calhoun 1; 1828, John Q. Adams and Richard Rush; 1832, Henry Clay and John Sergeant; 1836, William H. Harrison and Francis Granger; 1840, William H. Harrison and John Tyler; 1844, Henry Clay and Theodore Frelinghuysen; 1848, Zachary Taylor and Millard Fillmore; 1852, Franklin Pierce and William R. King; 1856, James Buchanan and John C. Breckinridge; 1860, John C. Breckinridge and Joseph Lane; 1864, no vote; 1868, Horatio Seymour and Francis P. Blair; 1872, U. S. Grant and Henry Wilson; 1876, Samuel J. Tilden and Thomas A. Hendricks; 1880, Winfield S Hancock and William H. English; 1884, Grover Cleveland and Thomas A. Hendricks.

Population.—(1790) 59,094; (1800) 64,273; (1810) 72,674; (1820) 72,749; (1830) 76,748; (1840)78,085; (1850) 91,532; (1860) 112,216; (1870) 125,015—white, 102,221; colored, 22,794; (1880) 146,608—white, 120,160; colored, 26,448; male, 74,108; female, 72,500; native, 137,140; foreign-born, 9,468; (1887) 170,000.

DELAWARE: city, cap. D. co., O.; on the Olentangy river and the Cleveland Columbus Cincinnati and Indianapolis and the Springfield branch railroads; 24 m. n. of Columbus. It is regularly laid out and neatly built, contains a popular medicinal spring, and is the seat of O. Wesleyan Univ., organized 1844 and possessing a library of over 18,000 volumes, and of O Wesleyan Female College, organized 1863. The industries embrace large railroad repairing shops, several foundries and flour and oil mills, machine shops, and manufactories of cordage, crash, furniture, iron fences, lumber, beer, and woolen goods. It has several schools, 2 national banks with a capital of $200,000, and a large hotel. Forests of ash, elm, hickory, oak, and sugar-maple abound in the immediate vicinity, and corn, wheat, hay, butter, flax, wool, and oats are largely cultivated. Pop. (1870) 5,641; (1880) 6,894.

DEL'AWARE BAY: estuary of Delaware river, abt. 60 m. in length; greatest width, 30 m. It is w. of N. J., and e. of Del , its entrance being between Cape May, N. J., and Cape Henlopen, Del. Numerous shoals make the navigation dangerous near the mouth, and there is no natural anchorage convenient, therefore an artificial harbor, abt. 300 acres in extent, and at least 24 ft. in depth has been formed at Cape Henlopen; it is known as the Delaware Breakwater, and is at Lewes, Delaware.

DELAWARE River: dividing N. Y. and N. J. from Penn. and Del. It rises in N. Y., on the w. slope of the Catskill Mountains, and flows in a generally southerly direction, forcing its way through the great Appalachian mountain chain, between almost perpendicular crags of more than 1,000 ft. in height, and gradually expanding into a broad estuary. With a course of fully 300 m., it is navigable for large ships to Philadelphia, and for steam-vessels to the head of tide-water at Trenton. The D. is connected by one canal with the Chesapeake Bay, and by two others with the Hudson river and along the w. side of the stream runs a similiar work for 60 m. from Easton to Bristol. The Indian name of the river was Chickohocki.

DELAWARE INDIANS: tribe of N. American aborigines of the Algonquin family, calling themselves Lenni-Lenape, located formerly on the Delaware and Schuylkill rivers in Penn. They are supposed to have removed from the west, and were divided into three powerful families, known as the turtles, turkeys, and wolves, when the Dutch settlers entered into trading relations with them, 1613. They remained on friendly terms with the whites, and sold both Dutch and Swedes considerable tracts of land till 1632, when for some reason they destroyed the Dutch settlement of Swanendael. But this event does not appear to have caused more than a temporary cessation of trading relations. Other large tracts were bought by William Penn. Prior to 1740 they had formed a comparatively peaceful tribe. Then they alleged that the whites had defrauded them in their treaty, and, exhibiting an indisposition to vacate their territory, were forced by the Six Nations to do so, 1742. In their dispersion some went to Ohio, and others settled on the Susquehanna, Muskingum, and Alleghany rivers. Many of them served with Pontiac in the siege of Detroit, Fort Pitt, and other frontier posts, were totally defeated at Bushy Run, 1763, and made peace, 1764–5. During the revolutionary war the D. I. were divided, one part serving with the British, the other signing a special treaty of loyalty to congress. A portion of the latter that had been Christianized by the Moravians formed a settlement on the Muskingum, called Gnadenhütten, and engaged in agricultural pursuits till 1781, when the neighborhood was occupied by the British, who removed them to Sandusky. Subsequently 90 of them, returning to gather their crops, were killed by the Americans, and then the rest removed to Canada. In 1785, '89 the D. I. were guaranteed lands in Ohio between the Cuyahoga and Miami rivers, extending as far n. as Lake Erie, and tracts were reserved for the Christianized families on the Muskingum. A few returned to the latter region, and others established the town of Fairfield, Canada. During the war of 1812 the tribe generally remained loyal to the govt.; in 1818, they ceded all their lands to the United States, the greater part removed to White River, Mo., and a few remained in Ohio; in 1853 they sold all the lands that had been granted them to the govt., excepting sufficient in Can. for a reservation; and during the civil war sent nearly all their able-bodied men to the Union army. By this time they numbered only 1,085. In 1866 the extension of the Pacific railroad cut through their reservation, and they again had to move, ultimately settling on a tract acquired from the Cherokees on the Verdigris and Cane rivers, Kan. Under a special treaty they became citizens of the United States 1866, and severed their tribal relations. The remnant of the tribe, now less than 1,000 in all, are quite well educated, support churches and schools, and are employed in cattle-raising, farming, hunting, and fishing.

DELAWARE WATER GAP: popular summer resort in Monroe co., Penn.; on the Delaware river, and the Delaware Lackawanna and Western railroad; 4 m. s.e. of Stroudsburg, 57 m. s.s.e. of Scranton, 92 m. w. by n. of New York, 108 m. n. of Philadelphia. At this point the D. river finds a narrow passageway through the Kittatinny, or Blue Ridge, range of the Alleghany Mountains. The gap proper is the space between the almost precipitous sides of Mount Minsi on the Penn. side of the river, and Mount Tammany on the N. J. side. Both mounts rise to a height of 1,200 ft. above the water, have been rendered easy of ascent, and afford a vast and impressive panorama. The region for miles around abounds in natural attractions. There are several large hotels and boarding-houses between the railroad station and the summit of Kittatinny Mountain.

DE LA WARR, or DELAWARE, THOMAS WEST, Lord: d. 1618, June 7; b. England: gov. and cap.gen. of Va. He succeeded to the title derived from the Gloucestershire estate of La Warre on the death of his father 1602, was appointed second gov. and first capt. gen. of the then immense province of Va. by royal charter 1609, May 23, and landed at Jamestown 1610, June 9. He remained with the colonists about a year, and during this period built a trading post on the site of the present Hampton, erected two forts at the mouth of the James river, and spent a large fortune for the benefit of the colony. While on his way to the West Indies his vessel was driven by storms into a large river, which was subsequently named the D. in his honor. His administration was so wise and popular that in 1618 the colonists urged him to return to them, and while on his second voyage to Va. he died at sea; many historians believe that he was poisoned intentionally.

DELAY, v. *dĕ-lā'* [F. *délai*, delay—from L. *dilātus*, deferred, put off: comp. Gael. *dailich*, to delay]: to put off; to defer; to hinder for a time; to postpone; to protract; to linger; to hinder motion; N. a putting off; the time lost; hindrance of motion; lingering procrastination. DELAY'ING, imp. DELAYED', pp. *-lād'*.—SYN. of 'delay, v.': to procrastinate; prolong; protract; retard; stop; detain; hinder; tarry.

DEL CREDERE COMMISSION, *dĕl krā'dā-rā* or *dĕl krĕ'dė-rĕ:* Italian phrase, borrowed by the law-merchant to express the additional premium charged by a factor or agent, in virtue of which he warrants the solvency of the purchaser, and renders himself personally liable for the payment of the price of the goods sold. It is, in short, what is called a guaranty or warranty. If the percentage on the price for effecting the sales be two and a half, two and a half more is usually charged as del credere commission.

DELEBLE, a. *dĕl′ĕ-bl* [L. *delēbilĕ*, that may be destroyed]: that may be blotted out.

DELEB′ PALM: tree of great importance to the inhabitants of the regions around Lake Tsad, and other parts of the interior and west of Africa, being in some districts the predominant tree, although very local in its distribution, through the vast tracts from Kordofan to the Atlantic. It is supposed to be nearly related to the Palmyra Palm (q.v.) of India (*Borassus flabelliformis*). Its fruit, when full grown, is 6–8 inches long, and 4 inches thick, yellowish-brown; the pulp a very close and coarse fibrous tissue. It has a mawkish taste; yet it is very much used by the natives of Africa, who also break the stone and plant it in the ground, when in a few days a blade shoots up, and a very tender root is produced, which is a pleasant and much used article of food.—Barth's *Travels*.

DELECTABLE, a. *dĕ-lĕk′tă bl* [F. *délectable*—from L. *delectab′ĭlĭs*, delightful, agreeable (see Delight)]: highly pleasing; delightful. Delec′tably, ad. *-tă-blĭ*. Delec′tableness, n. *-bl-nĕs*. Delec′tabil′ity, n. *-tă-bĭl′ĭ-tĭ*. Delectation, n. *dē′lĕk-tā′shŭn* [F.]: great pleasure or delight.

DELECTUS PERSONÆ, *dē-lĕk′tŭs pėr-sō′nē* [Lat., choice of the person]: some legal relations, an assumed choice of the person, for some qualification possessing value in the eyes of one of the parties to the contract, which person so chosen cannot transmit his rights and obligations to another without the consent of the other party to the contract. For obvious reasons this rule usually holds in partnership; and unless in the case of great companies, where the sale of the stock is provided for, no new partner can be admitted if a single partner object to him. Even the executors and personal representatives of a partner do not succeed to his share. For the same reason, offices of trust are neither salable nor adjudgable for debt, though their emoluments may generally be attached for debt.

DELEGATE, n. *dĕl′ĕ-gāt* [L. *delēgātus*, sent away, intrusted—from *de*, *legārĕ*, to send as ambassador: It. *delegare:* F. *déléguer*]: one sent as a representative; a deputy; a commissioner; title of members in the first continental congress of the American colonies, 1774; title of representatives in the U. S. congress from the territories, having seats and the right of taking part in discussion, but without vote: V. to send with power to transact business; to intrust; to commit to another's care. Del′egating, imp. Del′egated, pp. Del′ega′tion, n. *-gā′shŭn* [F.—L.]: one or more delegates appointed to discharge some particular duty; the act of investing with authority to act for another; in *civil law*, the act of a debtor with the creditor's consent, procuring another person to act as debtor in his place; in *common law*, the transfer of property from one person to another; for a principle operative in all such acts of delegation, see DELECTUS PERSONÆ.—SYN. of delegate, v.': to empower; commission; accredit; depute; assign; commit.

DEL'EGATES, COURT OF: formerly in England, the supreme court of appeal in ecclesiastical and maritime causes. Before the time of Henry VIII., the practice had gradually become established of taking ecclesiastical causes on appeal to the court of Rome. By 24 Hen. VIII. c. 12, this practice was abolished, and appeals were directed to be heard by the archbishops of the several provinces. By 25 Hen. VIII. c. 19, it was directed that appeals should finally be referred to the king in council, and his majesty was by the same statute empowered to issue a commission under the great seal to hear the appeals. The court thus established was called the court of delegates. It consisted in ordinary causes of a puisné judge from each of the common law courts, and three or more civilians. After sentence had been pronounced by the court of delegates, it was competent for the king to grant a commission of review; but this power was rarely exercised, except upon the ground of error in fact or in law. When application for review was made, it was usual to refer to the chancellor the memorial praying for review, and by him the expediency of granting the prayer of the petition was determined. By 2 and 3 Will. IV. c. 92, the court of delegates was abolished, and its jurisdiction was transferred to the king in council. And by 3 and 4 Will. IV. c. 41, and 6 and 7 Vict. c. 38, the sovereign is empowered to refer all appeals from ecclesiastical or other courts to the judicial committee of the privy council.

DELEGA'TION [Ital. *Delegazione*]: term formerly applied in Lombardy, Venice, and the States of the Church, both to the governing court of a province and to the province itself. Until the recent political changes in Italy, there were nine delegations in Lombardy, and eight in Venice, each presided over by a delegate, vice-delegate, and various subordinates. In the States of the Church, 1816, seventeen delegations were established, but the number was several times altered. The delegate was always a prelate directly appointed by the pope. If he was a cardinal, he was called a legate, and his province a legation. —*Delegados del fomento*, in Spain, the superintendents of the entire police administration of a province.

DELENDA EST CARTHAGO, phrase, *dē-lĕn'da ĕst kâr·thā'gō* [L., Carthage must be blotted out or destroyed]: the celebrated sentence with which Cato the elder was accustomed to conclude all his speeches in the Roman senate.

DELESCLUZE, *dėh-lā-klüz'*, LOUIS CHARLES: 1809, Oct. 2—1871, May 28; b. Dreux, France: revolutionist. He imbibed radical ideas at an early age, was active in the republican movement 1830, and in the revolution 1848, was commissioner-gen. in the depts. Du Nord and Pas de Calais a short time, published several extremist newspapers in Paris, was transported to the island of Cayenne for 10 years 1857, but released by the amnesty, and founded the *Réveil* newspaper 1868. Under the Commune he was the head of the war commission, and opposed the govt. of national defense. He was killed on the barricades in Paris, and his death broke the resistance to the govt. troops.

DELESSERIA, n. *dĕ-lĕs-sēr'ĭ-a* [named after M. Benjamin *Delessert*, a French patron of botany]: genus of florideous algæ. typical one of the sub-order *Delesserieæ*. DELESSERIEÆ, sub-order of algæ, ord. *Ceramiaceæ* (rose-tangles).

DELETE, v. *dĕ-lēt'* [L *delētus*, blotted out]: to blot out; to efface; to expunge. DELE'TING, imp. DELE'TED, pp. DELE'TION, n. *-lē'shŭn*, the act of blotting out or erasing.

DELETERIOUS, a. *dĕl'ĕ tē'rĭ-ŭs* [Gr. *delētērĭŏs*, hurtful, destructive--from *dēlētēr*, a destroyer: F. *délétère*]: having the quality of injuring or destroying; destructive; injurious, pernicious. DEL'ETE'RIOUSLY, ad. *-lĭ*. DEL'ETE'RIOUSNESS, n. the state of being injurious or pernicious.—SYN. of 'deleterious': noxious; hurtful; prejudicial; detrimental; injurious; destructive; poisonous.

DELF, n. *dĕlf*, or DELFT-WARE, n. *dĕlft-wār:* a kind of pottery originally manufactured at Delft, Holland, in the 14th c. It is now considered coarse, but was among the best of its day, being considered equal to the Italian in quality, but somewhat inferior in its ornamentation.

DELF, n. *dĕlf* [AS. *delfan*, to delve, to dig]: in *OE.*, a quarry; a mine; a deep ditch. In *heraldry*, a charge, representing a square sod or turf, the term being derived, it is supposed, from the verb to *delve* or dig. A delf tenné is the appropriate abatement for him who revokes his challenge, or otherwise goes from his word: see ABATEMENT.

DELFT, *dĕlft* or *dĕlf:* one of the most ancient towns of s. Holland, on the Schie, 8 m. n.w. of Rotterdam. It is intersected by numerous canals, over which are 69 bridges. D. was formerly noted for its pottery (Delft-ware), but has now lost its reputation for this manufacture, and not more than 200 persons are engaged in the earthen-ware factories. D. is a dull town, but has several interesting buildings, one of which, the town-hall, is picturesque and richly adorned. The New Church contains a monument, more ornate than tasteful, to the memory of Prince William I. of Orange, assassinated here 1584, July 10. It contains also the tomb of Grotius, and the burial-vaults of the present royal family of Holland. The Old Church, a building of some note, contains the tomb of the naturalist Leeuwenhoek, and of the celebrated Admiral Tromp. D. has also a state arsenal, a college where all matters connected with the management of the dikes are taught, a gymnasium, and infirmary. There are manufactures of woolen cloths and tobacco-pipes. Pop. (1880) 25,355.

DELFTSHAVEN, *dĕlfts-hâ'vĕn:* old town in s. Holland on the Maas, two m. w. of Rotterdam. It is defended from floods by three strong dykes. The chief sources of wealth are distilling spirits, beer-brewing, iron-founding, shipbuilding, sawing wood, refining sugar, etc. From D. the company of English pilgrims from John Robinson's church at Leyden sailed in the *Speedwell*, a small ship which was to have accompanied the *Mayflower* to America, but instead transferred a portion of her passengers to that ship, at the port of Plymouth, England. Pop. (1880) 11,425.

DELGADA: see PONTÉ DELGADA.

DELHI (properly DEHLI): division in the Punjab, formerly in the N. W. Provinces. It comprises the three executive districts of Delhi, Goorgaon, and Kurnal; contains 2,724 villages; has an area of 5,610 sq. m. Pop. (1881) 1,907,984, of whom 1,019,104 were males.

DEL'HI (more correctly DEHLI): executive district in the Punjab, formerly in the N.W. Provinces; area, 1,276 sq. m. The trade and manufactures centre in the town of D. There is a branch of the E. Indian railway, and the Rajpootana State railway traverses the district for about 12 miles. Of about 900 sq. m. under cultivation, nearly a fourth are irrigated from government works, and a smaller part by private enterprise. To the s., the district is rocky and barren. The soil generally is sandy or rocky, and the most fertile portions are in the n. and n.w., watered by the Jumna. Pop. (1881) 643,515; three-fourths being Hindus; the remainder mainly Mohammedans and a few Sikhs, with upward of 2,000 Christians.

DELHI, *dĕl'lē* or *dĕl'hĭ* (ancient name, *Indraprestha*, or *Inderput;* Mohammedan name, *Shahjehanabad*): celebrated city of n. India; 28° 39' n. lat., and 77° 18' e. long., cap. of the province and district of the same name; on an offset of the river Jumna, about a mile from the right bank of that river, and at an estimated elevation of 800 ft. above the level of the sea. The modern city was founded by Shah Jehan 1631, has a circumference of about seven miles. It is protected by ramparts, bastions, etc., and is entered by 11 gates. The greater number of the streets in D. are narrow, but the Chandni Chauk is an exception, being 90 ft. broad, and 1,500 yards in length, and intersected by an aqueduct. The other principal street is 120 ft. wide, and one mile in length. D. has many monuments of former magnificence. The Mogul's palace was thought by Bp. Heber to surpass the Kremlin. The Jumma Musjid, or principal mosque, was commenced by Shah Jehan in the 4th year of his reign, and completed in the 10th, at a cost of $500,000. This magnificent building has been restored by the British government. The Delhi College was founded 1792, and in 1829 the sum of 170,000 rupees was bequeathed to it by a minister of the king of Oude The interest of this sum, together with grants from government, raises its annual revenue to 40,580 rupees. For each of the languages, English, Arabic, Persian, and Sanskrit, there is a separate department. D. has railway communication, by the E. Indian railway, with Calcutta, distant 1,019 m.; with Bombay, 870 m.; and with intermediate places. The mean temperature of the day has been ascertained, by observations extending over three years, to be: January, 56°; February, 61°; March, 72°; April, 83°; May, 91°; June, 92°; July, 86°; August, 83°; September, 83°; October, 77°; November, 65°; December, 58°. The vestiges of ancient D., on the e. bank of the Jumna, consisting of ruined tombs, gardens, serais, and palaces, cover an area of about 30 m. in circumference, and present a remarkable scene of desolation. The modern city is noted for its needle-work, and here the shawls of cashmere are embroidered in silk and gold. The D. goldsmiths are famous for the delicacy and beauty of their work. D. was the capital of the Afghan or Patan, and afterward of the Mogul empire. It was taken by a British army under Lord Lake, 1803, Sep. 8, and has ever since—if we except the brief period when it was held by the mutineers in 1857—continued under British rule.

D. has been rendered memorable by the events of 1857. The march on the city of the mutineers from Meerut, the terrible events of May 11, the explosion of the powder magazine by Willoughby and his heroic band, the tragic scenes that followed; the siege, the assault (Sep. 14), when the city was won (Sep. 20) gate by gate and quarter by quarter—a success shadowed by the death of the gallant Nicholson; the subsequent daring capture of the king of D. by Hodson of Hodson's Horse, and the capture and shooting of his miscreant sons by the same officer, are memorable events. Of late, the history of D. has been one of commercial prosperity. In 1877, it was the scene of the famous Durbar at which the queen of England was proclaimed empress of India, Pop. (1868) 154,417; (1881) 173,393, abt. one-half being Hindus, and the other half Mohammedans.

See Kaye's *History of the Sepoy War;* Keene's *Fall of the Moghul Empire;* the *Statistical Account of Delhi District;* and W. W. Hunter's *Imperial Gazetteer of India* (1881).

DE'LIA: festival of Apollo, held with great splendor in Delos, with musical and athletic contests.

DELIAC, n. *dĕ'lĭ-ăk* [from the island *Delos*]: a kind of sculptured vase; also, beautiful bronze and silver.

DELIBERATE, v. *dĕ-lĭb'ėr-āt* [L. *delibĕrātus*, weighed well in one's mind—from *de*, *lībro*, I weigh or cause to swing: It. *deliberare:* F. *délibérer*]: to consider or examine; to balance in the mind; to weigh reasons for and against: Adj. slow in determining; slow in action; well advised or considered: cool; wary. **Delib'erating**, imp. **Delib'erated**, pp. **Delib'erately**, ad. *-lĭ*, with careful consideration. **Delib'era'tion**, n. *-ā'shŭn* [F.—L.]: the act of weighing and examining with care; discussion and particular examination of reasons for and against a measure. **Delib'erateness**, n. the quality of being deliberate; wariness; calm consideration. **Delib'erative**, a. *-tĭv*, having a right or power to deliberate or discuss. **Delib'era'tively**, ad. *-lĭ*. —Syn. of 'deliberate, v.': to consult; debate; ponder; weigh; consider; reflect; dispute; argue; discuss; contend.

DELICACY, n. *dĕl'ĭ-kă-sĭ* [L. *delĭciæ*, pleasure, delight

—from *delĭcātus*, charming, giving pleasure. It. *delicato;* F. *délicat*, delicate, delicious; *délice*, joy, pleasure—*lit.*, that which gives joy or pleasure to, as an appetizing morsel]: fineness of texture; a thing dainty and pleasant to the taste; elegance of feminine beauty in form or dress; a nice propriety in civility or politeness, proceeding from a desire to please; tenderness or consideration; tenderness of constitution; weakness. DEL′ICATE, a. *-kāt* [L. *delĭcātus*, luxurious]: soft; smooth; of a fine texture; nice or pleasing to the taste; nice and discriminating in the perception of beauty or deformity; fine; slender; that must be tended or handled with care; effeminate; not able to endure hardship; not robust; feeble; scrupulously polite and considerate in attending to the wishes and feelings of others: N. in *OE.*, a nicety; a choice dainty. DEL′ICATELY, ad. *-lĭ.* DEL′ICATENESS, n. DELICIOUS. a. *dĕ-lĭsh′ŭs* [OF. *delicieus;* F. *délicieux*, delicious—from mid. L. *deliciōsus*, pleasant]: highly pleasing to the taste or other sense; very grateful; exquisitely delightful. DELICI′OUSLY, ad. *-lĭ.* DELICI′OUSNESS, n. the quality of being delicious.

DELICES, n. plu. *dĕl′ĭ-sēz* [F. *délices*, delights—from L. *delĭciæ*]: in *OE.*, delicacies.

DELICT, *de-lĭkt′*, in Law: offense committed with a positively malicious purpose, or an injury inflicted by culpable negligence of so gross a kind as to amount almost to crime. See DAMAGES.

DELIGHT, v. *dĕ-līt′* [OE. *delit* and *deleit*, delight: Anglo-Norm. forms, *deliten*, to delight, to take pleasure; *delitable*, pleasant: OF. *deliter;* F. *délecter*, to delight—from L. *delectārĕ*, to delight; to please (see under DELICACY)]: to please highly; to give or afford high satisfaction; to have great pleasure in: N. a high degree of pleasure or satisfaction; that which gives great pleasure. DELIGHT′ING, imp. DELIGHT′ED, pp.: ADJ. greatly pleased. DELIGHT′INGLY, ad. *-lĭ.* DELIGHT′LESS, a. without delight. DELIGHT′FUL, a. *-fûl*, giving delight; highly pleasing. DELIGHT′FULLY, ad. *-lĭ*, in a delightful manner; pleasantly. DELIGHT′FULNESS, n. the state or quality of being delightful. DELIGHT′SOME, a. *-sŭm*, very pleasing. DELIGHT′SOMELY, ad. *-lĭ.* DELIGHT′SOMENESS, n. the quality of being delightsome.—SYN. of 'delighted': pleased; glad; joyful; gratified;—of 'delightful': delicious; charming.

DELILAH, *de-lī′la* or *del′ĭ-la* [Heb., the languishing]: Philistine woman whom Samson loved. By her flattering blandishments, she obtained from him the secret that his divinely given strength depended on the condition that his locks should not be shorn; and having cut these off while he lay asleep, she then treacherously betrayed the strengthless warrior into the hands of his enemies.

DELILLE, *dĕh-lēl′*, JACQUES: 1738, June 22–1813, May 1; b. Aigues-Perse, in Auvergne: French poet. He received his education at the Collége de Lisieux, Paris, and was appointed to a professorship in Paris, at the Collége de la Marche. Here he published a translation of the *Georgics* of Virgil (1769), distinguished by its grace and elegance of style. It had an enthusiastic reception. In 1774, he published *Les Jardins*, with less success. The Comte d'Artois presented him with the abbey of St. Severin, or rather with its revenues, for he did not insist on D. becoming a priest. His poem *L'Imagination* was written during a visit which he made to Constantinople 1784, in the suite of the French ambassador to the Ottoman court. On his return, he was elected prof. of *belles lettres* at the Univ. of Paris, and of Latin poetry at the College of France. At the revolution in 1789, he lost all his property. He afterward removed to Switzerland, where, 1800, he published *L'Homme des Champs.* In 1801, he visited London, published a translation of *Paradise Lost*, and returning to Paris, resumed his connection with the academy and the college there.

DELIMA, n. *dĕ-lī'ma* [L. *delimo,* I file off: so named because the leaves of some of the species are used for polishing]: genus of plants consisting of climbing shrubs, and belonging to the order *Dilleniaceæ*. DELIMEÆ, *dĕ-līm'ē-ē*, tribe of plants belonging to the order *Dilleniaceæ*.

DELIMITATION, n. *dĕ-lĭm'ĭ-tā'shŭn* [F. *délimitation*—from *délimiter*, to fix boundaries—from mid. L. *delimitārĕ*]: the boundary-line of a country; the fixing the boundaries of a country, or countries, especially when a rearrangement of territory is to be effected.

DELINEATE, v. *dĕ-lĭn'ĭ-āt* [L. *delinĕātus*, sketched or marked out—from *de, linĕă*, a line: It. *delineare*]: to mark out with lines; to sketch or design; to represent in a picture; to draw a likeness of in words; to describe in words, as character. DELIN'EATING, imp. DELIN'EATED, pp. DELIN'EA'TOR, n. one who. DELIN'EA'TION, n. *-ā'shŭn* [F.—L.]: drawing an outline; a sketch; a description in words.

DELINQUENT, n. *dĕ-lĭng'kwĕnt* [F. *délinquant*, an offender—from L. *delinquens* or *delinquen'tem*, committing a fault—from *de, linquo*, I quit or forsake: It. *delinquente*]: one who fails in performing his duty, particularly public duty; an offender; one who commits a fault or crime: ADJ. failing in duty. DELIN'QUENTLY, ad. *-lĭ*. DELIN'QUENCY, n. *-kwĕn-sĭ*, failure in duty; a fault; a misdeed; a crime.

DELIQUATE, v. *dĕl'ĭ-kwăt* [L. *deliquātus*, melted]: to melt; to be dissolved. DEL'IQUATING, imp. DEL'IQUATED, pp.: ADJ. melted; dissolved. DEL'IQUA'TION, n. *-kwā'shŭn*, the act or state of melting.

DELIQUESCE, v. *dĕl'ĭ-kwĕs'* [L. *deliques'cĕrĕ*, to dissolve—from *de, liquērĕ*, to be fluid, to melt]: to dissolve or become liquid by attracting moisture from the air. DEL'IQUES'CING, imp. DEL'IQUESCED', pp. *-kwĕst'*. DEL'IQUES'CENT, a. *-kwĕs'ĕnt*, liquefying by contact with the air. DEL'IQUES'CENCE, n. *-sĕns*, melting or liquefying by absorbing moisture from the air; caustic potash and the chlorides of sodium and magnesium are among substances that deliquesce.

DELIQUIUM, n. *dĕ-lĭk'wĭ-ŭm* [L. *deliquĭŭm*, want or

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defect: It. *deliquio*, a swoon]: in *chem.*, a melting in the air or in a moist place; a failure of power; a fainting.

DELIRIOUS, a. *dĕ-lĭr'ĭ-ŭs* [L. *delirĭŭm*, madness—from *de*, *lira*, the ridge between two furrows: It. *delirio:* F. *délire—lit.*, deviating from the furrow or straight line]: disordered in mind; raving. **Delir'iously**, ad. *-lĭ*. **Delir'iousness**, n. state of being delirious. **Delir'ium**, *-ŭm* [L.]: a wandering of the mind; a disorder of the intellect; temporary insanity caused by a diseased state of the body, as in fever.—Syn. of 'delirium': insanity; frenzy; madness; derangement; lunacy; aberration; mania; monomania; dementia.

DELIR'IUM: state of deranged mind, in which the intellect and the judgment are perverted or lost, while the imagination and the passions are often excited or left without control. The result is an incoherent or totally disordered course of action and speech, frequently attended by delusions, or unreasoning belief in supposed facts, which the sound mind at once perceives to have no reality. The nature, extent, and variety of the delusions, and the degree to which the control of the reason over them is lost, may indicate the type of the delirium; and in some instances, the cause of the disease is decidely shown by the prevailing impressions on the mind and senses. For Maniacal D., or Mania, see Insanity; for Typhoid Delirium, or Typhomania, see Fever: see also Delirium Ebriosum: Delirium Nervosum or Traumaticum: Delirium Tremens.

DELIR'IUM EMBRIO'SUM: form of acute mania, having intoxication for its exciting cause. It is often mistaken for Delirium Tremens (q.v.), and doubtless has frequently been dealt with as such in criminal cases. It originates either from a single fit of intoxication, or a short course of intemperance—frequently of periodical occurrence—in those who are mentally excitable from hereditary peculiarity of constitution, or from some previous injury of the head, and who may have experienced some cause for depression of spirits. It is marked by an uncontrollable desire for strong drink, which, when gratified, only leads to further imperious demands, until the drink itself is loathed, and sickness brings about recovery. Indecorous conduct or wild and vicious passions are displayed, and frequently homicide and murder are perpetrated.

DELIR'IUM NERVO'SUM, or **Delirium Traumat'icum**: attack of delirium with tremors, which frequently supervenes on severe bodily injuries, such as gunshot wounds, burns, and fractures—occurring chiefly in large hospitals—in the case of persons of weakly constitution, who are irritable and nervous, and have been intemperate in their habits.

DELIR′IUM TRE′MENS: disease originating from the abuse of alcoholic stimulants by those of a nervous and irritable temperament; characterized by a combination of delirium with muscular tremors. The tremors are general, but chiefly of the hands, and of the tongue when protruded; and the delirium is of a muttering, sight-seeing, bustling, abrupt, anxious, apprehensive kind. The individual affected cannot follow out a train of thought, explain an illusion or perverted sensation, or perform any act correctly; and though at one moment partially conscious and rational, is the next incoherent and excited by the most ridiculous fancies of a spectral kind, such as visitors in the shape of devils, cats, rats, and snakes, or by alarming occurrences, such as robberies, fires, and pursuits for crimes. All this is ushered in and attended by complete sleeplessness; and during the attack, if in uncomplicated form, there is no violence or ferocity of demeanor (see DELIRIUM EBRIOSUM), though mischief to the patient or others may be done under false impressions; and he is easily pleased by gentleness and indulgence, and fretted by restraint and opposition. The face has generally a pale dirty color, and anxious expression; eyes startled but lustreless, sometimes considerably suffused, and the pupils not contracted, unless under treatment with opium, or when inflammation of the membranes of the brain has supervened; skin warm and moist, often perspiring copiously; tongue sometimes loaded, but generally pale, moist, and remarkbly clean; appetite small, but the individual will often take whatever is presented to him; thirst by no means urgent, with seldom or never any craving for spirituous liquors; alvine evacuations bilious and offensive; urine scanty, high colored, and often albuminous; the pulse usually 90 to 120, and generally soft, but of various degrees of fulness and smallness. The precursory symptoms are not peculiar to or pathognomonic of this disease, but common to many other febrile affections implicating the functions of the sensorium, of the circulation, or of digestion; and the paroxysm—distinguished by the above phenomena—runs a remarkably uniform course, independently of age and constitution. In genuine uncomplicated cases—that is to say, when not precipitated by other illness, such as bronchitis, pneumonia, erysipelas, and fever; or some accident, such as contusions and fractures, in which cases the illness is more of the nature of the Delirium Traumaticum (q. v.)—the paroxysm runs its course in from two to three days, and terminates in sleep, from which the individual usually awakens convalescent.

Previous to publication of the views of Dr. Peddie of Edinburgh (from whose paper the above description is taken), the generally received opinions regarding the essential nature of D. T. were, that it is a disease of exhaustion or irritation of nervous power, and that it has the habitual abuse of intoxicating liquors for its predisposing, and the abstraction or diminution of the accustomed stimuli for its exciting cause; and consequently, that the proper treatment consists in the continuation of stimulants—'a hair of the dog that bit'—together with large opiates to act on the same principle, and force on the salutary, or what has been called the critical sleep. Since then, however, a great revolution has taken place in the views of the medical professsion regarding the pathology and treatment of D. T.; and a fatal result in a genuine case of the disease now seldom or never occurs, where these views are understood and acted on.

It has been shown that the more the history and phenomena of the affection are examined, the greater will the difficulties surrounding the second part of the proposition above stated become. It has been shown that the affection is specific and peculiar, uniform in its symptoms and progress; and that it is essentially a form of nervous poisoning —a toxicological result from the accumulation of alcohol in the system through the continued abuse of stimulants. It has been observed that the alcohol—in whatever way it may be atomically changed or chemically combined—acts on the nervous pulp of the brain through the medium of the circulation, and sets up in it an alcoholism or alcoholic erethism, manifested by a certain amount and kind of exhaustion of the cerebral and muscular functions, together with decided over-action in the meningeal vessels; and that the alcoholic principle, though acting at first slowly, begins ere long to poison the gray matter of the brain, so that every additional drop thereafter brings it more and more into a poisoned condition, until at length, unless arrested by judicious treatment, the state of irritation tends to inflammatory action and serious encephalic mischief. While, therefore, the first part of the above proposition is true—though explainable in a very different way from formerly received opinions—the second part, viz., that the diminution or abstraction of the accustomed stimulus, is the exciting cause of the disease, is altogether untenable. Analogy will not bear out the assertion. Mercurial fumes, or the oxides of mercury, when long inhaled or absorbed into the body, as in the case of quicksilver minors, gilders, and others, in the course of time produce an attack of shaking paralysis—the *tremblement mercuriel* of the French pathologists; but will the workmen thus long exposed be more likely to become affected with tremors when removed from this poisonous atmosphere and occupation, than if continuing at their work? The reverse is well known to be the fact, not only in the case of such artisans, but of those who are beginning to suffer in a somewhat similar way from lead-poisoning. In both affections, when the symptoms are precursory or recent, a cure can be effected only by removal from the injurious occupation; otherwise, the symptoms deepen with hourly increasing rapidity, until tremors are succeeded by sleeplessness, delirium, and ultimately coma. Then, too, for example, salivation from any of the preparations of mercury and narcotism from any opiate, are not intensified by withdrawing these agents after a certain point is reached. On the contrary, a continuation beyond that stage, particularly in some kinds of constitution, more rapidly develops their peculiar physiological manifestations; and now, an infinitesimal dose will do what a large dose in an earlier stage could not. Thus is it with alcoholic stimulants in the production of delirium tremens. In those of a highly sanguine temperament, and of a nervous irritable disposition, the effect of a certain length of indulgence is to induce this condition (just as in subjects with the tendency to gout, a certain amount of high-living is apt to produce an attack of that affection), and beyond that stage, a small quantity of alcoholic stimulus will keep up and deepen the effect, which, previously, a large dose would not do, or, in another individual, could not produce, whatever quantity is imbibed. Thus is explainable the very common erroneous statement made in regard to an individual affected with delirium tremens; that though for a considerable time he had systematically indulged in considerable quantities of spirits, wine, or malt liquor, or in all of these, yet for a week or two he had drunk very sparingly, and, within the last few days, little or none; indeed, that he was now suffering from the withdrawal of his wonted stimulus, in meritorious efforts to free himself from a habit of which he had begun to be ashamed. All this seems plausible: but the statement should rather have been that, although consuming large quantities of drink at one time, he had felt latterly a smaller quantity affect him; that he then reduced still further the amount, but experienced an equal if not greater constitutional effect therefrom; and thus, from day to day, reduction was forced on him by his own sensations of gastric irritation, nervous excitement, and muscular debility—these feelings being, in fact, neither more nor less than the premonitory symptoms of an attack of delirium tremens, and just what might be looked for on the view that the alcoholic principle is in such instances a cumulative poison, and the exciting as well as the predisposing cause of the affection. That such is the true solution of the problem, cannot be doubted; and if a suspension or diminution of habitual supplies of stimulants be at any time followed by symptoms of delirium tremens, this is not to be regarded as the result of the change in the practice of the individual, but as occurring in spite of it, and because the constitutional effect is already produced, and the premonitory stage of the disease begun. In a considerable number of instances, drink is taken freely up to the period when the disease is developed, there being no diminution of the quantity consumed, and no interval in the practice; and when there really is some diminution from the amount of previous supplies, it is on account of the system being already affected so much that a less quantity now produces a greater or equal effect. On the other hand, it may be safely averred, in contradiction to the popular error, that though stimulants are at once taken away from the habitual dram-drinker, a paroxysm of delirium tremens will not be produced if the peculiar diathesis is not yet established, and the precursory symptoms of the disease are not already begun. He may experience much mental disquietude and physical discomfort, and feel weak for a time, just as a gormand would feel lowered and depressed by the abstraction of his accustomed good living; but this would soon pass off, without the occurrence of the usual signs of delirium tremens, more especially without those spectral illusions or phantasms, which are common to poisonings with several other agents of the narcotico-acrid class.

The above position is fully evidenced by experience derived from some large prison establishments, showing that while fully three-fourths of the criminals committed belong to the intemperate classes, and a large number, especially of the debtor class, are habitual drinkers up to the moment of admission, no bad effects are observed from the sudden withdrawal of the wonted stimuli, and the substitution of prison-fare.

In regard to the treatment of this remarkable disease, it is evident, from its phenomena and pathology, that the non-stimulating and non-opiate plan must be safest and best. If more spirits deepen the paroxysm, by producing greater cerebral determination, then why administer even one drop additional? And if opiates combined with spirits, or given alone, act in the same manner, and tend to occasion congestion in the blood-vessels of the brain, why run the risk of inflammation, convulsions, and coma, in an endeavor to force on the salutary sleep? It must not be overlooked that this sleep is the normal termination of the paroxysm, and is not to be viewed as a part of the affection, or in the same light as we are accustomed to regard a critical sweat or other discharge. It indicates diminished activity of the cerebral circulation and functions, and the commencement of convalescence. Hence, in a large proportion of instances, the sleep will take place spontaneously, and it will be safer to do nothing at all. The object, therefore, of treatment should rather be to remove all hindrances to sleep than to force it. In the more severe cases, this is best done by a moderate and well-regulated course of tartrate of antimony, the action of which, in this affection, appears remarkably sedative. It greatly diminishes excited action, induces weariness of muscle, general nervous exhaustion, and mental languor. It thus removes all obstacles to the occurrence of the salutary sleep, and favors it; and when the individual exhausted seeks his couch, he finds repose—not as a drugged sleep, but naturally and profoundly—awaking in general with restored reason and muscular control. Digitalis has been given with the same view, also ipecacuanha and aconite; but none of these answer the various ends so well as antimony. In the milder cases, however, no medicine is required, and it seems enough to do in such, what is essentially necessary in the severer attacks—to support the strength—the organic functions of life—by suitable nourishment, such as soups, *café au lait*, and white of egg, and to soothe in every possible manner the excited feelings of the patient. Nothing is more hurtful in delirium tremens than restraint, particularly that of the strait waistcoat. It increases the cerebral excitement by the never-ceasing struggles for liberty which ensue, so that fatal convulsions frequently result. All the control required is the presence of one or two judicious attendants, who will humor the patient in his whims and fancies; who will speak and act regarding them so as to assure him of safety, and to relieve him of that apprehension which is the most characteristic feature of the delirium; and who will mildly but firmly interpose, if he attempts anything which may accidentally prove injurious to himself or others. The apartment, however, in which the patient is confined should be well secured, for he may rush out at the door, or leap from a window, in the fright and frenzy of imagined danger. The larger, too, the room is, the better, that he may have space to advance and retreat, according as he wishes to scrutinize or avoid a suspicious or distressing object of his fancy; to arrange and rearrange the furniture; or to carry on, after a fashion, the imaginary duties of some bustling occupation. Besides this, there should be abundance of light, so as to dissipate terrifying hallucinations. The expenditure of muscular effort without any restraint, aids greatly in producing a safe kind of mental and physical exhaustion; and the individual, languid and worn-out, lies down voluntarily, and falls into the desired and restorative sleep.—*The Pathology of Delirium Tremens, and its Treatment without Stimulants or Opiates*, by A. Peddie, M.D.. pp. 51, 8vo.

DE LISLE, *deh-lēl'*, or *dė-līl'*, GUILLAUME: 1675, Feb. 28—1726, Jan. 25; b. Paris: geographer. His father, Claude De L., was a noted historian and geographer, and encouraged his son's study in that direction. Before he was 9 years old he had elaborated several remarkable charts from ancient history; and in 1700 he completed his great life work, the reformation of the geographical system current since the days of Ptolemy. In this he prepared maps of the entire known world, with careful corrections of the mistakes of his predecessors. An edition, improved by additions rather than corrections, was published 1724. He was elected a member of the Acad. des Sciences 1702, contributed several memoirs to its publications, became tutor in geography to Louis XV., and was appointed by him first geographer to the king, and pensioned 1718. Besides his maps, which numbered 134, he constructed a celestial and terrestrial globe, which attracted wide attention.

DELITESCENT, a. *dĕl'ĭ-tĕs'sĕnt* [L. *delites'cens*, or *delitescen'tem*, lying hid—from *de*, *lates'cens*, hiding one's self]: lying hid; concealed. DEL'ITES'CENCE, n. *-ĕns*, in *med.*, the period during which morbid poisons, as small-pox, lie hid in the system; concealment; sudden disappearance of inflammatory symptoms.

DELITSZCH, *dā'lĕtsh* (named after the Slavonic *Deleczen*, anciently dominant there): town of Prussian Saxony, 15 m. n. from Leipzig, with which it is connected by railway, on the right bank of the Lobber, a small river. It is an old but well-built town, and has manufactures of tobacco, woolen cloth, and hosiery. It is the capital of a circle, for the most part flat, but producing much corn and fruit. Pop. (1880), 8,225.

DELIVER, v. *dĕ-lĭv'ėr* [F. *délivrer*, to release—from L. *delibĕrārĕ*—from L. *de*, *libĕro*, I free—from *liber*, free]: to set at liberty; to free; to save; to rescue; to give or transfer, as from one person to another; to utter; to pronounce; to surrender; to disburden or relieve of a child in childbirth. DELIV'ERING, imp. DELIV'ERED, pp. *-ėrd*. DELIV'ERER, n. *-ėr-ėr*, one who. DELIV'ERABLE, a. *-ă bl*, that may be delivered. TO DELIVER UP, to surrender. TO DELIVER OVER, to transfer; to pass into the hands of another. DELIV'ERANCE, n. *-ăns* [F.—L.]: release from any kind of restraint; rescue from danger; in *OE.*, the act of bringing forth children; utterance. DELIV'ERY, n. *-ĭ*, the act of delivering; release from restraint or danger; a passing from one to another, as goods; manner of speaking in public: childbirth, see MIDWIFERY.—SYN. of 'deliver': to deliberate; release; surrender; transfer; commit; resign; communicate; utter; pronounce; impart; discharge; give forth.

DELIV'ERY IN SALE: see SALE OF GOODS.

DELIV'ERY OF A DEED: see DEED.

DELL, n. *dĕl* [from *dale*—which see: old Dut. *delle*, a pool, a ditch: W. *twll*, a hole, a pit: Goth. and Dan. *dal*, a valley]: a small but deep narrow valley.

DELLA CRUSCAN SCHOOL, *dĕl'la krŭs'kan:* an affected and vapid style of English literary performance; also the company practicing it. About 1785, a number of English residents at Florence amused their lagging hours by writing verses, which they published under the title of *The Florence Miscellany*. The insipidity, affectation, and fantastic silliness of these productions were almost incredible; yet such was the poetic destitution of the period, that they soon found a crowd of admirers and imitators. Taking the name of an academy at Florence (see ACADEMY), the Della Cruscans now began to print their precious lucubrations in England, chiefly in two daily newspapers, *The World* and *The Oracle*. 'While the epidemic malady was spreading from fool to fool,' as Gifford pungently says, one of the brotherhood, a Mr. Robert Merry, came over from Florence, and 'immediately announced himself by a sonnet to Love.' It was answered by a certain Anna Matilda, who (as was the custom) praised it immoderately in language even more absurd than Merry's own. According to Gifford, 'the fever now turned to a frenzy: Laura, Maria, Carlos, Orlando, Adelaide, and a thousand other nameless names, caught the infection; and from one end of the kingdom to the other all was nonsense and Della Crusca.' Retribution, however, came (for Nemesis watches the course of poetry as well as of politics). In 1794 Gifford produced his *Baviad*, and in 1796 his *Mæviad*. Rarely has literature witnessed such a scalping. It ended the school, and, indeed, it is only in these two poems that the memory of most of the Della Cruscan songsters has been preserved.

DELLYS, *dĕl-lēz':* seaport town of Algeria, 49 m. e. of Algiers. The French part has wide streets, and a square planted with trees. The Arab part, greatly more populous, retains its old character; its streets are narrow and tortuous. The climate of D. is reckoned very salubrious. The vine and the olive thrive in the neighborhood. *Bechena*, a kind of sorghum or durra, is grown. There is a trade in grain, oil, and salt. Pop. of town, 3,000; of commune, 10,000.

DELOLME, *dĕh-lōlm'*, JEAN LOUIS: 1740–1806, June 16; b. Geneva: originally an advocate in his native town, but by certain political disturbances there, in which he had shared, he was forced to leave it. He went to England, where he lived several years in great poverty. He returned to his native country 1775, and died at a village in Switzerland. D.'s principal work is *Constitution de l'Angleterre, ou Etat du Gouvernement Anglais comparé avec la Forme Républicaine et avec les autres Monarchies de l'Europe* (Amsterdam 1771); English translation by the author (Lond. 1772). In 1772, he published in English, *Parallel between the English Government and the former Government of Sweden;* ten years later, his *History of the Flagellants, or Memorials of Human Superstition;* and 1796, *Essay containing Strictures on the Union of Scotland with England.*

DELOMORPHOUS, a. *dē'lō-mŏrf'ŭs* [Gr. *dēlos*, plain; *morphē*, form]: applied to certain cells in the glands of the stomach, larger and more distinct than those among which they lie.

DE LONG, GEORGE WASHINGTON, U.S.N.: 1844, Aug. 22—1881, Oct. 30; b. New York: Arctic explorer. He graduated at the U. S. Naval Acad. 1865, was promoted ensign 1866, master 1868, lieut. 1869, and lieut. commander 1879. He was attached to the *Juniata* during her voyage to the Arctic regions in search of the *Polaris*, 1873, appointed to command the exploring expedition fitted out by James Gordon Bennett, and sailed in the *Jeannette* from San Francisco 1879, July 8. The vessel was caught in pack-ice Sep. 5, and after drifting over 600 m. was crushed in lat. 77° 15' n. long. 155° 50' e, 1881, June 13. The commander, surgeon Ambler, and 13 of the crew were found dead, with all the records of the expedition and a diary written up to 1881, Oct. 30, at the delta of the Lena river, Siberia, 1882, March.

DELORME, *dĕh-lorm'*, MARION; abt. 1612–abt. 1651; b. at a village near Châlons-sur-Marne, and came early to Paris, where her great beauty would easily have opened to her a good marriage, had she not been inclined to a life of licentious intrigue. Almost all the distinguished men of the age were her 'lovers.' During the first disturbances of the *Frondeurs*, her house was the rallying-point of the chiefs of that party, and in consequence, Mazarin was about to imprison her, when she suddenly died. A remarkable tradition sprang up in France during the next century, to the effect that Marion had *not* died, but escaped to London; that she had returned to Paris 1682; that she, meanwhile, had been thrice married—first, to a lord second, to a robber chief, and third, to a procurator of finance; and, finally, that she died 1706, or, as others say, 1741, in her 129th year. Victor Hugo has made her the subject of one of his historical dramas.

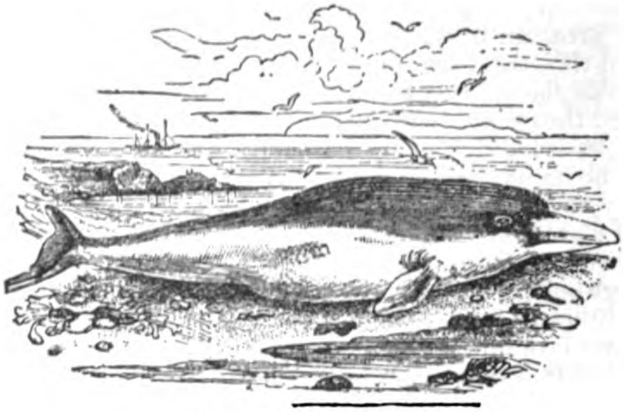
DELOS, *dē'lŏs* (called also in ancient times Asteria, Ortygia, Cynthus, etc): island in the Grecian Archipelago, smallest of the Cyclades; situated between the islands Rheneia and Mykonus; lat. about 37° 23′ n., and long. 25° 17′ e. According to the mythological account, it was at first a floating island, but was fixed to the bottom by Zeus, in order that it might become a safe abode to Leto, who, about to bring forth Apollo and Diana, was seeking a refuge from the wrath of Hera. Its earliest historical inhabitants were Ionians, and it appears to have been the centre of a great periodical festival held in honor of Apollo, both on the mainland and in the islands (see Dedia). In B.C. 426 D. was purified by the Athenians, all the tombs were removed from it, and it was declared pollution for any birth or death to take place on it. Four years afterward the inhabitants of Athens expelled the Delians from the island. After B.C. 146, when Corinth fell, D. became the seat of extensive commerce. Its sacred associations, its great festival, its excellent harbor, and its situation in the direct route from s. Europe to the coasts of Asia, combined to give it favor with merchants. So great was the traffic of D., that it is said 10,000 slaves changed hands here in one day. After flourishing for a considerable time, it was devastated in the Mithridatic war, and never recovered. Pliny describes D. as being merely a rock, only 5 m. in circumference. It was noted for its palm-trees, and also for its brass, and the brazen vessels which it manufactured. The town of Delos, which stood at the foot of Mount Cynthus, a granite crag 400 to 500 feet high, is now a mass of ruins. Still, however, the remains of the great temple of Apollo, and of the colossal statue raised in his honor, may be distinctly traced, though shiploads of the more perfect architectural fragments were conveyed, centuries ago, to Venice and Constantinople. A few shepherds and goatherds from Mykonus are now the only inhabitants of Delos.

DELPHI, *dĕl'fī* (now Castri): ancient town of Phocis, Greece, famous for its oracle of Apollo; about eight m. n. of an indentation in the n. shore of the Gulf of Lepanto (Corinthian Gulf), at the s. base of Parnassus; lat. 38° 27′ n., and long. 22° 37′ e. Its original name, and that by which Homer invariably speaks of it, was Pytho. It stood in the centre of a district renowned for classical associations. Occupying the vale of the Pleistus, it was seated in a semicircle like the area of a grand natural theatre, backed toward the n. by two lateral spurs of Parnassus. These lateral ranges extend e. and w. around D., and give rise also, from the point at which they approximate, to the famous fountain of Castalia, the holy water of the Delphian temple. The earliest inhabitants of D. are said to have come from Lycoreia, a town on one of the slopes of Parnassus, the inhabitants of which are supposed to have been Dorians. From the Delphian nobles were at first taken the chief magistrates and the priests of the temple, while the Pythia or female who delivered the oracle, at first a young maiden, latterly a woman, of not less than fifty years, was usually selected from some family of poor country-people. In the centre of the temple was a small opening in the ground whence arose an intoxicating vapor; and the Pythia having breathed this, sat down upon the tripod or three-legged seat, which was placed over the chasm in the ground, and thence delivered the oracle, which if not pronounced at first in hexameters, was handed over to a poet, employed for the purpose, who converted it into that form of verse. As the celebrity of the Delphic oracle increased, D. became a town of great wealth and importance. In the 8th c. before Christ, it had become famous not only in Hellas, but also among the neighboring nations. Here the Pythian games were first celebrated B.C. 586. The first stone temple at D., built by Trophonius and Agamedes, was destroyed by fire B.C. 548, but was rebuilt at the cost of 300 talents ($575,000) and was fronted with Parian marble. In B.C. 480 Xerxes sent a portion of his army to plunder the temple but as they climbed the rugged path that led to the shrine, a peal of thunder broke overhead, and two huge crags tumbling from the heights crushed many of the Persians to death, while the others, struck with terror, turned and fled. It was plundered by the Phocians during the Sacred War, and was attacked by the Gauls B.C. 279, who, approaching by that route which the Persians had on a. former occasion adopted, were repulsed by a similar (reputedly) supernatural agency. D. subsequently excited the rapacity of many potentates, and suffered severely by their attacks. Nero carried off from it 500 statues in bronze; Constantine also removed many of its works of art to his own capital. In the time of Pliny, the number of statues in D was not less than 3,000, and within the temple for a long time stood a golden statue of Apollo.

The modern town of Castri now occupies the site of Delphi. Its situation is beautiful, and from it the traveller has an excellent view of the ancient valley. Castri stands in the immediate neighborhood of the source of the still flowing Castalian spring.

DELPHIAN, a. *dĕl'fĭ ăn*, or DEL'PHIC, a. *-fĭk* [*Delphi*. a town in Greece]: pertaining to Delphi, or to the celebrated oracle of that place.

DELPHINAPTERA, *dĕl-fĭn-ăp'tē râ:* a genus of *Cetacea*, of the family *Delphinidæ*, agreeing with *Beluga* (q.v.) in th want of a dorsal fin, but differing in having the snout produced into a slender beak, which is flattened transversely, and separated from the head by a marked furrow. *D. Peronii*, the RIGHT WHALE-PORPOISE of the South Sea whalers, is an inhabitant chiefly of the seas of far southern latitudes, but sometimes found even on the coasts of New Guinea. It is about five or six ft. long, black, with brilliantly white belly and snout. Its mouth is furnished with a great number of slender sharp teeth. *D. Commersonii*, also in far southern latitudes, is about the size of a porpoise, silvery white; the snout, tail, and pectorals tipped with black, and is described as one of the most beautiful inhabitants of the ocean. *D. borealis* was discovered by the U. S. Exploring Expedition in the n. Pacific Ocean.



Delphinaptera Peronii.

DELPHINE, or DELPHIN, a. *dĕl'fĭn* [L. *delphīnus*, a. dolphin, a constellation of stars]: pertaining, to a dolphin. DELPHIN CLASSICS, edition of the Greek and Roman classics, prepared by 39 of the best scholars of the time, under the editorship of Bossuet and Huet, tutors to the Dauphin (q.v.), son of Louis XIV. The title-pages bear the words, *In usum Serenissimi Delphini*; hence the name. They have never been reprinted *as a whole* in English, but octavo editions of particular authors, such as Virgil and Horace, have been published for the use of schools. They have little value in the eye of a scholar of the present day.

DELPHINIA, *dĕl-fĭn'ĭ-â:* annual festival of Apollo, at Athens where the god had the name Delphinios. Very little is known of it beyond the fact that girls carrying branches of trees went in procession to the temple.

DELPHIN'IDÆ, AND DELPHI'NUS: see DOLPHIN.

DELPHIN'IUM: see LARKSPUR.

DELPHINORHYNCHUS, *dĕl-fĭ-no-rĭng'kŭs:* genus of cetacea of the family *Delphinidæ*, having one dorsal fin like the true dolphins, but the beak not distinguished from the forehead by a furrow. *D. Bredanensis*, or *D. rostratus*, a species about eight ft. long, black above and reddish below, has been thrown ashore on the French Atlantic coast. A much larger species, *D. coronatus*, attaining the length of 30–36 ft , is described as one of the whales of high n. latitudes, having been seen in numerous flocks among the ice-islands near Spitzbergen.

DELSARTE, *dĕl-sârt'*, FRANÇOIS ALEXANDRE NICOLAS CHERIE: 1811, Dec. 19—1871, July 19; b. Solesmes, France: educator. His father, a physician, sent him to Paris to study with a painter on china 1822, but he soon tired of this occupation and entered the Conservatory 1825. He attained distinction as a tenor singer in the Opera

Comique, suddenly lost his voice, and thereafter applied himself to musical and dramatic instruction, having among his pupils many who afterward achieved operatic and dramatic celebrity. He was author of several melodies and romances, but his chief work was the elaboration of a system of dramatic expression by which the voice and the entire action of the body were trained by fixed rules. He aimed to make elocution a science. His system, at least in part, has of late been gaining adherents among elocutionists in this country.

DELTA, n. *dĕl'tă* [the name of the Gr. letter Δ or δ, Eng. D]: a name applied by the Greeks to the alluvial deposit at the mouth of the Nile, from its shape resembling Δ; any alluvial tract of land between the diverging mouths of a river. **DEL'TIC**, a. *-tĭk*, of or pertaining to a delta. **DEL'TOID**, a. *-toyd* [Gr. *eidos*, shape]: in the form of Δ; resembling a delta; triangular: N. the great muscle of the shoulder.

DEL'TA: alluvial deposit at the mouth of a river from the deposition of the particles which it has held in suspension. This deposit usually causes the division of the river into several mouths of which the most remote are sometimes hundreds of miles apart where they enter the sea. The Ganges D. has a base line on the sea of abt. 200. m.; and its two sides have abt. the same length. The formation of deltas depends more upon the presence or absence of currents in the ocean at the mouth of the river, than upon the quantity of sediment held in suspension when it reaches the sea. Deltas are consequently of almost invariable occurrence in inland lakes, in the quiet estuaries of the nearly tideless Mediterranean, and in the sheltered bays and gulfs of other seas. When on the other hand, there are strong ebb-tides, or powerful oceanic currents, the detritus is carred off into the sea.

DEL'TA MET'AL: valuable alloy, of the same ingredients as brass, with the addition of iron. It is very hard, does not rust readily, and may be both wrought and cast. It has been used in shipbuilding with advantage.

DELTOHEDRON, n. *dĕl-to-hē'drŭn* [Gr. *delto*, the form *delta* takes when the first element in a compound, and *hedra*, a seat, a base]: a solid, the surface of which is formed by 24 deltoids.

DELUDE, v. *dĕ-lôd'* {L. *delūdĕrĕ*, to deceive—from *de*, *lūdo*, I play or mock: It. *deludere*]: to deceive; to impose on; to mislead the mind or judgment; to lead astray in belief. **DELU'DING**, imp. **DELU'DED**, pp. **DELU'DER**, n. one who. **DELU'DABLE**, a. *-dă-bl*, liable to be deluded or deceived. **DELU'SION**, n. *-lô'zhŭn* [L. *delūsus*, mocked]: the act of misleading the mind; the state of being deluded; error in belief; the thing which misleads or deceives; deception. **DELU'SIVE**, a. *-sĭv*, tending to deceive; apt to mislead. **DELU'SIVELY**, ad. *-lĭ*. **DELU'SIVENESS**, n. *-nĕs*, the quality of being delusive; tendency to deceive. **DELU'SORY**, a. *-sėr-ĭ*, apt to deceive; deceptive.—SYN. of 'delude': to deceive; mislead; beguile; impose on; frustrate; disappoint.

DELUGE, n. *dĕl′ūj* [F. *déluge*—from L. *diluvĭŭm*, a great flood: It. *diluvio*]: great flood; inundation; the great flood of Noah; an overwhelming calamity: V. to overflow with water; to inundate; to submerge; to drown; to overwhelm. DEL′UGING, imp. DEL′UGED, pp *-ūjd.*—There is scarcely any considerable race of men among whom there does not exist, in some form, the tradition of a great deluge, which destroyed all the human race except their own progenitors. That the Noachian deluge, recorded in Scripture, covered the whole earth, was the universal opinion until toward the close of the last century. The organic remains, on which the science of palæontology is now founded, were regarded as its wrecks, and were held to prove that it had covered every known country, and risen over the highest hills. In the progress of geology, it soon became evident that most of the stratified rocks demanded an earlier origin than a few thousand years, and the influence of the deluge was consequently restricted to the slightly altered superficial deposits; but many of these were, after a few years, found to belong to a period vastly anterior to any historical epoch, and to have been produced by long-continued and steady agencies, differing totally from a temporary deluge. The present tendency of opinion among writers like the late Hugh Miller, is to regard the flood of Noah as partial and local, as regards the earth's surface, though possibly (as some maintain) complete as regards the inhabited portions. Many biblical scholars assert that according to Hebrew modes of speech, the scriptural account admits this partial application.

DELUGE TABLET, or DELUGE TABLETS: in *archeol.*, the name given to a tablet or tablets (the eleventh of the Izdubar Legends), inscribed with cuneiform writing, which being translated is found to contain the Chaldean account of the deluge. Perhaps it may have been originally Accadian. A paper on the subject was read by Mr. George Smith, of the British Museum, before the Society of Biblical Archæoogy, in 1872, Dec. 3, and a revised translation published 1874: see *Bib. Archæol. Soc. Trans.* iii. (1874), 530–576.

DE LUNAT′ICO INQUIREN′DO: see INSANITY (legal).

DELUN′DUNG (*Prionodon gracilis*): carnivorous animal inhabiting the forests of Java, referred to the family *Viverridæ*, but regarded as a connecting link between that family and *Felidæ*. It is of slender form, with a long cylindrical tail, and is prettily streaked and spotted.

DELUSION, DELUSIVE, etc : see under DELUDE.

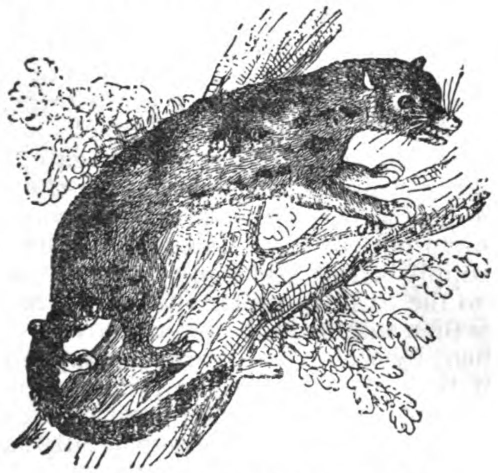
DELVE, v. *dĕlv* [AS. *delfan;* Dut. *delven*, to dig: Dut. *delle*, a valley—*lit.*, to make a dale or valley]: to open the ground with a spade; to dig. DELV′ING, imp. DELVED, pp. *dĕlvd.* DELV′ER, n. one who.

DELVINO, *dĕl′vē-nō:* town of Albania, European Turkey, about 50 m. n.w. of Janina, beautifully situated on a hill-slope covered with olive and orange groves. The women's dress is peculiar, being a long white wrapper enveloping them from head to foot, giving them the appearance of animated monumental figures. D. is fortified, is the seat of a Greek bishop, and has considerable trade in olive-oil. Pop. 7,500.

DEMAGNETIZE, v. *dē-măg'nĕ-tīz'* [L. *de*, down, away; and *magnetize*]: to deprive of magnetic power or influence. DEMAG NETI'ZING, imp. DEMAG NETIZED, pp. *-tīzd.*

DEMAGOGUE, n. *dĕm'ă-gŏg* [F. *démagogue*—from Gr. *dēmagōgos*—from *dēmos*, the people or populace; *agōgos*, a leader: It. *demagogo*]: an orator who addresses himself to the people in order to attach them to himself for factious purposes; a democratic or revolutionary politician. DEM'AGOG'ISM, n. *-ĭzm*, the principles, acts, or conduct of a demagogue. DEM'AGOG'Y, n. *-gŏj'ĭ*, the qualities of a demagogue.

DEMAIN, n. *dĕ-mān'*, or DEMESNE, n. *dĕ-mēn'* [OF. *demaine*, estate, possessions—from L. *domĭnĭŭm*, lordship, estate, possessions]: estate in lands; a house, and land adjoining, kept for the proprietor's own use; often used in the plu. DEMESNES, *dĕ-mēnz':* see DEMESNE.



Delundung (*Prionodon gracilis*).

DEMAND, v. *dĕ-mănd'* [F. *demander*, to demand—from L. *demandārĕ*—from *de*, *mandārĕ*, to commit to one's care]. to claim or seek from, as by authority or right; to require or ask, as a price; to question as by virtue of a right; in *law*, to prosecute in a real action: N. an asking with authority; a challenging as due; the requiring of a price for goods; the desire to possess. DEMAND'ING, imp. DEMAND'ED, pp. DEMAN'DABLE, a. *dă-bl*, that may be claimed. DEMAN'DANT, n. one who. DEMAN'DER, n. one who. DEMAND AND SUPPLY, in *commerce*, terms used to express the relations between consumption and production. IN DEMAND, much sought after. ON DEMAND, payment at once, on request or presentation.—SYN. of 'demand, v.': to ask; request; beg; beseech; supplicate; entreat; implore; solicit; adjure; crave; require; question.

DEMAND AND SUPPLY: law or agency in political economy, whose nature and influence have been the subject of considerable dispute. It has sometimes been maintained as a ruling principle, that the demand for anything creates the supply. This has been denied, however; and it has been held that, on the contrary, the supply precedes the demand, since the article must be in existence before a purchaser goes to ask for it: steam-engines, for instance, and india-rubber goloshes, must have been invented and made before any one thought of purchasing them. To this it is rejoined that the demand for them was plainly foreseen in the manifest need of them, and that this led to the supply. Consideration seems to show that neither of the two views is correct as stating a uniform ruling principle; inasmuch as demand and supply are forces constantly interactive, tending to equality in their activity and amount, yet with varying precedence one over the other. The most convenient way, perhaps, of viewing the term demand and supply, is to consider it as applicable to articles in the market; and here we shall find that the demand and the supply are continually vibrating with a tendency to balance. Sometimes there is more of an article than will sell at a remunerating price, sometimes less; but there is always a strong tendency to a balance. Thus, on any day in London or New York, the supply of beef or of fish may be less than the demand—that is to say, the trade may be so brisk that had there been a few more bullocks at Smithfield, or a few more salmon and turbot at Billingsgate, they might have been sold at remunerating prices. At the same time, there may happen to be an excess of both commodities at some small town not distant. It never will happen, however, that a supply suited for a metropolitan market will find its way to the little town, or that no more will reach the great city than might feed the little town. This is the great law, then, by which the world is supplied with the necessaries of life. Every day the proper supply for the enormous consumption of London is on its way from the uttermost ends of the earth, as systematically as the sap is ascending to penetrate through all the branches of the tree. How impossible it would be to effect the same thing by artificial organization, may be illustrated from the Russian campaign of Napoleon, where, despite of the most skilful and costly arrangements, one portion of the army were starving to death, while another were slaughtering their bullocks and leaving them to rot! It is necessary to keep in view the proper function of this law (see COMPETITION). The demand will not produce everything: no money will bring forth when wanted a Milton's *Paradise Lost,* or a Raphael's *Transfiguration* On the other hand, there are services beneficial to the world, or to a community, for which there is no demand in the commercial sense. There is a demand for almanacs, but no demand (commercial) for the astronomical investigations on which they are founded. There is a commerical demand for teachers of Latin and Greek, and for Latin and Greek school-books, but none for the profound scholarship necessary for keeping the knowledge of these languages alive; hence come scientific and scholastic endowments and establishments—an instance almost of the lack of demand creating a supply.

DEMARKATION, or DEMARCATION, n. *dē'mâr-kā'shŭn,* [F. *démarcation*—from *de, marquer,* to mark: L. *de;* AS. *mearc,* a mark, a boundary: Sp. *demarcar,* to mark out limits]: a line, real or imaginary, that bounds or limits; separation of territory; but the common expression is LINE OF DEMARKATION.—An imaginary due n. and s. line was so called, running 360 m. w. of the Azores; established by Pope Alexander VI., 1494, who decided that all new lands discovered w. of this line should belong to Spain, all e. to Portugal.

DEMATIEI, n. plu. *dĕ-măt-ĭ-ē'ī* [Gr. *demation,* a little bundle; dim. of *dema,* a bundle; *deō,* I bind]: family of hyphomycetous fungi, growing on the dead parts of plants, and characterized by the mostly septate spores being attached to rigid thick-walled filaments, which are continuous or septate. DEMAT'IUM, *-ŭm,* genus of *Dematiei,* growing upon dry leaves, bark, etc.

DEMAVEND, MOUNT, *dĕm-â-vĕnd':* extinct volcano in Persia, abt. 40 m. n.e. of Teheran. It forms the loftiest peak of the Elburz Chain, which separates the low shores of the Caspian Sea from the high table-land of Persia. Although no longer subject to eruptions, D. bears traces of it having been an active volcano within the most recent geological epoch. Its summit is conical, covered with sulphur, and rent by heated fissures. The crater is still visible, and the surface of the mountain is in many places covered with scoriæ. At its base hot springs give evidence of the continued existence of volcanic fire at no great distance beneath the surface. A great deposit of sulphur covers the summit of D., and is brought down to the plains in bags to be disposed of as an article of commerce. Although the path that leads to the peak is, for this reason, familiar to the inhabitants of the adjoining districts, the mountain was not ascended by any European till 1837, Sep., when William T. Thomson of the English Embassy at Teheran, with the view of taking important bearings from a point which commands an extensive view of the shores of the Caspian, determined to reach the summit. He set out from the base with four guides, three of whom deserted him when they experienced the effect of the rarified atmosphere on their breathing. The first night he slept below the snow limit; the second night in a sulphur cavern near the summit, so highly heated that the hand could not endure being placed near a crevice of the interior. On leaving this place of shelter, the traveller's wet clothes were instantly frozen with a bitter blast from the Caspian. The height, as recently determined by the Russian Survey, is 18,600 feet.

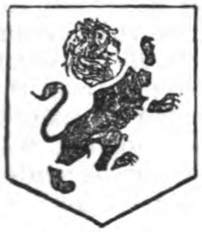
D. towers high above the neighboring mountains, the adjacent summits not exceeding two-thirds of its elevation. At all times it has been a conspicuous object from the great trade route between India and the West, along the edge of the Persion table-land. It is not then to be wondered at that it is connected with the earliest Persian as Etna is connected with the earliest Greek traditions. There seems indeed more than an accidental coincidence between the fables which relate to the two mountains. According to the Greeks, the giant Typhon was buried under the volcanic region of Sicily, and the earthquakes and eruptions were caused by his efforts to escape. Fire proceeded from his mouth, and he was figured with one hundred snakes growing from each shoulder. Zohak, a personification of the evil principle, was in the same way supposed by the Persians to be buried under Demavend. He was figured with one serpent growing out of each shoulder; and in other respects he had much in common with the Greek monster.

DEMBEA, *dĕm'be-a*, or TZANA, LAKE OF: in Abyssinia; lat. 12° n., long. 37° 15′ e.; 50 m. in length, with an average breadth of 25 miles. It occupies part of an extremely fertile plain, at an elevation of some 6,000 ft. above the sea, and contains several beautiful islands, one of which is inhabited. Its southern portion is traversed by the Blue Nile.

DEMBINSKI, *dĕm-bĭn'skē*, HEINRICH: 1791, Jan. 16—1864, June 13; b. in the palatinate of Cracow: Polish gen. connected with the Hungarian revolution. He entered the Polish army 1809, took part in the invasion of Russia by the French 1812, and was made captain by Napoleon himself on the battle-field of Smolensk. He subsequently distinguished himself at Leipsic. After the fall of the Empire, he returned to his native country, and lived in comparative obscurity. The Polish revolution of 1830 called him again to arms. He obtained the command of a brigade of cavalry, and showed heroic courage at the battle of Kuflew. Afterward, he made the campaign of Lithuania, under Gielgud; and arriving in Warsaw—having traversed the entire Russian lines—was made commander-in chief of the national army. After the surrender of Warsaw to the Russians, D. went to France, where he published his *Mémoires sur la Campagne de Lithuanie* (Strasbourg 1832). In 1833, he went to Egypt, and entered the service of Mehemet Ali, but returned to Paris 1835. On the outbreak of the Hungarian insurrection, he offered his services to that country, and Kossuth appointed him commander-in-chief of the Hungarian army. He drew up a plan of the campaign, but could not obtain the concurrence of Görgei, whose tardy arrival caused the loss of the battle of Kapolna, 1849, Feb. 26–28. Forced to retreat behind the Theiss, D. resigned his command, but subsequently consented to act under Messaros. He strongly urged the necessity of uniting the cause of Hungary with that of Poland, and proposed to lead an army into Galicia; but his advice was not taken. After the resignation of Kossuth, and the capitulation signed by Görgei at Vilagos (1849, Aug. 13), D. fled to Turkey. In 1850, he returned to France, and began his *Mémoires* on the Hungarian war. He died in Paris.

DEMEAN, v. *dĕ-mēn'* [OF. *demener*, to conduct, to guide—from L. *de*, down; F. *mener*, to lead, to conduct—from mid. L. *minārĕ*, to lead from place to place]: to behave; to conduct; to lessen; to debase; to degrade; to lower: N. in *OE.*, presence; behavior. DEMEAN'ING, imp. DEMEANED', pp. *-mēnd'*. DEMEAN'OR, n. *-ėr*, behavior; carriage; deportment. *Note.*—DEMEAN has acquired the sense, 'to debase or degrade,' from the popular etymology which supposed it to be derived from *de*, down, and *mean*, base; or otherwise a mistake for OE. *bemean.*—SYN. of 'demeanor': air; bearing; mien; behavior; management; conduct; deportment.

DEMEMBRÉ, *dā-mâng-brā*, or DISMEM'BERED: heraldic term to signify that the members of an animal are cut from its body.


Dismembered.

DEMENTED, a. *dĕ-mĕn'tĕd* [L. *dementīrĕ*, to be out of one's sense; *dementĭă*, madness—from *de*, *mens*, or *mentem*, the mind—*lit.*, down or depressed in mind]: out of his mind; crazy; infatuated; mad. DEMEN'TEDNESS, n. DEMEN'TATE, v. *-tāt*, to make mad. DEMEN'TIA, n. *-shĭ-ă*, a form of insanity, characterized by a rapid succession of imperfect and disconnected ideas, with loss of reflection and attention: see INSANITY.

DEMERA'RA RIVER: in British Guiana (q.v.); upward of 200 m. in length, is 1½ m. broad at its mouth, and navigable by ships of considerable burden for 100 m. Its affluents are numerous though small, and at its embouchure into the Atlantic it affords a spacious harbor, obstructed, however, by a bar. It has many settlements on its banks.

For the county of Demerara, see GUIANA, BRITISH.

DEMERIT, n. *dĕ-mĕr'ĭt* [F. *démérite*, demerit—from mid. L. *demerĭtum*, a fault—from L. *de*, *merĭtus*, deserved]: that which deserves punishment; opposite of *merit;* misdeed; ill-deserving; misconduct; in *OE.*, merit; desert—in which the *de* does not change the sense of *merit.*

DEMESNE, *dė-mēn'* or *dė-mān'* [see DEMAIN]: in the present day the right which the owner in possession of lands in fee simple has in his estate. But the original signification of D. was that portion of the lands of a Manor (q.v.) which the lord of the manor reserved for his immediate use and occupation. The lands so reserved were cultivated either by the lord of the manor or by his villeins (see SERF), and were thus distinguished from lands granted or subfeued to vassals for services to be rendered. So long as the practice of sub-infeudation continued, the D. lands were a distinct and separate right; but the statute *Quia Emptores*, 18 Ed. I., having abolished sub-infeudations, and declared that on every transfer of land the feofee should hold of the lord paramount, all lands became of necessity demesne, being in the actual possession of the owner or his tenants. DEMESNIAL, a. *dĕ-mēn'ĭ-ăl*, pertaining to demesnes.

ANCIENT DEMESNE, species of Copyhold Tenure (q.v.).

Lands held in ancient demesne are said to have belonged originally to vassals of the crown. The services rendered were determinate, not variable at the will of the lord, and more honorable than those of copyhold in general. The tenants also were entitled to certain privileges and exemptions from feudal services. But in process of time, the character of the services appears to have varied; so that in the present day tenants in ancient demesne in some instances differ little from ordinary copyhold tenants.

DEME'TER: see CERES.

DEMETRIUS, *dē-mē'trĭ-ŭs:* assumed name of four different persons prominent in Russian history 1603–13. The real DEMETRIUS was son of Ivan 'the Terrible,' who died 1584 leaving two sons, Feodor, who ascended the throne, and Demetrius. Feodor was a weak ruler, completely under the control of his brother-in-law Boris Godunoff. Demetrius was brought up at a distance from the Muscovite court, and when only nine or ten years old, either accidentally killed himself, or more probably, was put to death. In 1598, Feodor died also, and Boris ascended the throne, but his tyrannical measures rendered him very unpopular.

In 1603, a strange story reached Russia. It was affirmed that D. was not dead, but had appeared in Poland. The *fact* was, that a person calling himself D., but who, it was asserted, was in reality a monk named Grishka Otrepiev, belonging to the convent of Tchudoff, had found means to persuade Prince Wisniewski in Lithuania, and afterward Mniszek, Palatine of Sandomir, that he was D. the true son of Ivan. The palatine introduced him to Sigismund III., King of Poland, who saw in him a useful instrument for introducing Polish influence into Russia, and so aided him in his designs against Boris. Toward the close of 1604, he invaded Russia, repeatedly defeated Boris (who died 1605 Apr.), and entered Moscow in June, the people receiving him with every demonstration of enthusiasm. He ruled for some months with vigor; but his manifest predilection for the Poles soon excited the Russians against him, and the arrival of his bride, Marina Mniszek, the daughter of the Palatine of Sandomir, 1606, May 12, brought the discontent to a head. Sixteen days later, an insurrection broke out in the capital, headed by Prince Wasili Shuiski. D. was slain, and a multitude of the Poles massacred; and Wasili Shuiski ascended the throne.

In the following year, an individual appeared alleging that he was D., and that another had been mistaken for him in the Moscow massacre. He found a considerable number of adherents, especially when Marina acknowledged him as her husband. The Poles also helped him, and for some time it seemed likely that he would succeed; but at length he was put to death at Kaluga 1610.

The third *false* D. gave himself out to be the son of the first. After a brief career, he fell into the hands of the czar, and was strangled.

The *fourth* made the same pretensions, but falling into the hands of the Cossacks, was carried to Moscow, where he was put to death 1613.

DEMETRIUS, PHALE′REUS (named from the Attic demos of Phalerus, a seaport of Athens): abt. B.C. 345–283 (it is said); b. Phalerus: orator and politician. Though descended from a family possessing neither rank nor property, yet by the resolute and persevering exercise of his abilities, he rose to the highest honors at Athens. Having been educated in the school of Theophrastus, he entered upon public life about B.C. 325, and soon made himself famous for great oratorical talent. In B.C. 317, D. was placed by Cassander at the head of the administration of Athens, which office he discharged with such acceptance for nearly 10 years, that the grateful Athenians, during that time, heaped all kinds of honors upon him, and erected to him no less than 360 statues. During the later period of his administration, he seems to have given himself up to dissipation; and when Demetrius Poliorcetes, King of Macedonia, approached Athens with a besieging army, B.C. 307, D., having lost the sympathies and co-operation of the Athenians, was compelled to flee. All his statues were demolished except one. D. retired first to Thebes, but afterward found refuge in the court of Ptolemy Lagi, at Alexandria, where he lived many years, applying himself to literature. On the death of his protector, D. was expelled from the court of Egypt, and retreating to Busiris in Upper Egypt, he is said to have died there from the bite of an asp. D. was the last of the Attic orators worthy of the name. His style was graceful, insinuating, and elegant; bearing, however, in its luxuriousness and tendency to effeminacy, the marks of a declining oratory. The list of his works (50 in number) given by Diogenes Laërtius shows him to have been a man of most extensive acquirements.

DEMETRIUS I., POLIORCETES, *dē-mē′trĭ-ŭs pŏl-ĭ-or-sē′tēz*, King of Macedonia: B.C. 335–B.C. 283: son of Antigonus, one of Alexander's most successful generals, who received several provinces in Asia Minor on the division of the Macedonian empire. He entered on a military career at an early age, was his father's chief officer in the war with Ptolemy, and received his surname P. 'taker of cities' because of his military skill and victories. When 22 years old he opposed Ptolemy's advance into Syria; was defeated at Gaza B.C. 312, but soon afterward gained a decisive victory over Ptolemy's ablest general; took the cities of Munychia, Megara, and Athens from Cassander; defeated Ptolemy in a great naval battle and occupied Cyprus, B.C. 306; maintained an unsuccessful siege of Rhodes over a year; returned to Greece, expelled Cassander from Attica, and took Corinth, Argos, Sicyon, and most of the towns of Arcadia; took part in the battle of Ipsus in Phrygia where his father lost his life, B.C. 301; made an alliance with Seleucus and retook Athens after a long siege, B.C. 295; seized the throne of Macedonia while acting as mediator between the sons of Cassander, B.C. 294; lost his Asiatic possessions to Ptolemy and Seleucus; was expelled from

Macedonia by Pyrrhus, and imprisoned by Seleucus till his death.

DEMETRIUS OF SUNIUM: philosopher of the Greek sect of cynics, whose professed aim was to inculcate a love of rigid virtue and a contempt of pleasure. Authorities differ as to his identity. Some assert that he spent the greater part of his life at Corinth, and first became famous during the reign of Caligula; while others maintain that his life was spent in Rome, or at least that he lived there till the reign of Domitian. Philostratus mentions a D. of Corinth, who, Prof. Drisler believes, was the same as D. of S. Authorities agree, however, in crediting him with a life of extreme strictness and a bitterness of speech in censuring high and low alike who differed with him that caused his banishment.

DEMI, *dĕm'ĭ* [F. *demi*, half—from L. *dimĭdĭŭm*, the half—from *dis*, apart; *medĭŭs*, middle: Gr. *hēmĭ;* L. *sēmi*, half]: a very common prefix, signifying a half, or part of that of which it forms the prefix—generally separated by a hyphen. In *heraldry*, Demi or Demy denotes an animal of which only the upper or fore half is represented. In inanimate objects, the dexter half per pale is usually intended, when it is said to be demi, though a *demi-fleur-de-lis*, for example, may be a *fleur-de-lis* divided per fess.

DEMI-BASTION, n. *dĕm'ĭ-băst'yŭn* [*demi*, and *bastion*]: kind of half-bastion; that part of a bastion cut off by the capital, consisting of one face and one front; it frequently terminates the branches of a crown-work or horn-work: see BASTION: CROWN-WORK: HORN-WORK.—**DEMI-CADENCE**, n. *-kā'dĕns*, in *music*, an imperfect cadence, or one falling on any other than the key-note. **DEMI-EQUITANT**, a. in *bot.*, applied to folded leaves successively embracing each other, when only one half of a leaf embraces one half of another; obvolute: see EQUITANT. **DEMI-GOD**, n. *dĕm'ĭ-gŏd*, an inferior deity; a fabulous hero.

DEMIDOFF, *dĕm'e-dof* or *dĕm-e-dof':* Russian family who in Russia occupy a position as capitalists similar to that held by the Rothschilds elsewhere, and who are not more celebrated for their wealth than for their beneficence.

NIKITA D., founder of the family, was a serf in the time of Peter the Great, but, leaving the place of his birth to escape being taken as a recruit, he afterward became famous as a manufacturer of arms, and before his death had amassed an immense fortune. In 1699, he established an iron-foundry, under the auspices of Peter the Great in whose favor he had attained a high position, near Neviansk on the e. base of the Ural Mountains; this being the first iron-foundry ever established in Siberia. He subsequently erected numerous other forges among the solitudes of the Urals, and realized from them very great riches.

AKIMFI D., son of Nikita D.; employed German workmen to explore the rich mines of gold, silver, and copper, in the valley of the Irtish, and the upper reaches of the Obi. In 1725, he built, at the foot of the Magnetic Mountain in Siberia, a foundry called Nischneitagilsk, still the most important in all Siberia. The Russian govt., sensible of the great service done to the country by the labors of such a man, conferred upon the enterprising metallurgist the title of counselor of state.

PROCOPE D., son of Akimfi D.; founded 1772 a school of commerce at Moscow, intended to furnish a complete education for the sons of Russian tradesmen. This establishment was transferred to St. Petersburg 1800.

PAUL D., cousin of Procope D., also a man of energy, travelled extensively when young, applying himself to the natural sciences. He presented to the univ. of Moscow a valuable museum of natural history, and founded also, 1803, the Demidoff Museum at Yaroslavl.

NICHOLAS, Count D., 1774–1828, nephew of Paul D.; distinguished himself while young as an aide-de-camp in the war against the Turks. Later, he married the Countess Stroganoff, and became a privy councillor and imperial chamberlain. His taste for the fine arts and for natural science led him to travel extensively; he also caused the workmen whom he employed in his mines to travel, in order to acquaint themselves with the processes of foreign miners. In 1812, he fought at the head of a regiment which he himself raised and led against the French. A collection of his works, entitled *Opuscules d'Economie Politique et Privée,* was published at Paris 1830. Of his two children, PAUL and ANATOL, the former died young, leaving the great bulk of his fortune to the latter.

ANATOL D., 1810 (or 12)–1858, Jul. 13; son of Count Nicholas D., was educated in France. He was always remarkable for enthusiasm in letters and science. His principal book, published at Paris 1839 (English translation, London 1853), is entitled *Travels in Southern Russia and the Crimea, through Hungary, Wallachia, and Moldavia.* In 1840, he married the Princess Mathilde de Montfort, daughter of Prince Jerome Bonaparte. After five years, the marriage, by which there had been no children, was by mutual consent dissolved. Demidoff, 1856, June 19, presented the town of Spa with a bust of Peter the Great. Russia, as well as other countries, owes the foundation of many valuable charitable institutions to his philanthropy. He died at Baden.

DEMI-GORGE, n. *dĕm'ĭ-gŏrj* [F. *demi,* half, and *gorge*]: in *fort.*, half the imaginary line which forms the interior extremities of the faces or flanks of a work; in a bastion, the imaginary line formed by the prolongation of the curtain to the capital: see BASTION: GORGE.

DEMIJOHN, n. *dĕm'ĭ-jŏn* [F. *dame-jeanne,* lady Jane; a word common in the Levant and Arabia, and called in Egypt *damagan*, of which the F. is a corruption]: a large bottle with a small neck inclosed in wicker-work; a carboy.

DEMI-LUNE, n. *dĕm'ĭ-lôn* [F. *demi,* half; L. *luna,* the moon, from the semicircular shape it originally had]: in *fort.*, a work constructed to cover or defend the curtain or wall of a place, and the shoulders of the bastions adjoining;

consisting of two faces, meeting at a salient angle toward the open country, and situated between the covered-way and the curtain: it has two demi-gorges formed near the counterscarp, and is surrounded by a ditch: see LUNETTE: RAVELIN.

DEMI-MONDE, n. *dĕm'ĭ-mŏngd* [F. *demi*, half; *monde*, world]: a genteel name for the higher class of courtesans or prostitutes; they are expert in the art of dress, and for years their Parisian leaders have set the fashions for women's dress in Europe and the United States: see MONDE.

DEMIREP, n. *dĕm'ĭ-rĕp* [F. *demi*, and Eng. *reputation:* comp. Gael. *raip*, debauchery, filth: OE. *rip*, a morally ill-conditioned person]: a woman of doubtful character, or of suspicious chastity.

DEMIR-HISSAR, *dā-mĕr'hĭs-sâr'* ('iron-castle'): town of European Turkey, province of Saloniki; lat. 41° 12′ n., long. 23° 28′ e. It is on a tributary of the Karasu, at the foot of an old fort-crowned hill, is fortified, and contains several mosques and a Greek church. Pop. 8,000.

DEMISE, n. *dĕ-mīz'* [OF. *demise*, laid down, put away—from OF. *desmettre*, to displace, to dismiss—from L. *dimissus*, sent out or forth, dismissed—from *dis*, apart; *missus*, sent]: death; decease, formerly applied to a sovereign only, whose death passed the crown on to a new possessor; the conveyance of an estate by lease or will: V. to bequeath; to grant by will; to convey or lease; to devise: see LEASE (English). DEMI'SING, imp. DEMISED', pp. *-mīzd'*. DEMI'SABLE, a. *-mī'ză-bl.*—SYN. of 'demise, n.': decease; departure; release; transmission; transference.

DEMI-SEMIQUAVER, n. *dĕm'ĭ sĕm'ĭ-kwā'vėr* [*demi*, and *semiquaver*]: half of a *semiquaver;* or the 32d part of a semibreve: see NOTE, in Music; usually, the shortest musical note.

DEMISE OF THE CROWN: passing of the sovereignty, by death, to a successor. That 'the king never dies,' is a maxim of the public law of Great Britain, in accordance with which, immediately on the death of the reigning monarch, the sovereignty passes to his successor, by the act of the law itself. No installation, proclamation, coronation, or other ceremony is required to vest the new sovereign in the regal office; thus there is no interval or interregnum, and the royal dignity remains perpetual. It is by a sort of courteous and loyal analogy that the word demise is employed to signify the death of the sovereign. 'So tender,' says Blackstone, 'is the law of supposing even a possibility of his death, that his natural dissolution is generally called his demise, an expression which signifies merely a transfer of property.'

DEMISSION: see under DEMIT.

DEMIT, v. *dĕ-mĭt'* [L. *demittĕrĕ*, to let down, to lower: F. F. *démettre*, to resign: comp. L. *dimittĕrĕ*, to dismiss, to discharge—from *dis*, apart; *mitto*, I send]: in *Scot.*, to resign or give up an office; to lay down. DEMIT'TING, imp. DEMIT'TED, pp. DEMIS'SION, n. *-mĭsh'ŭn* [F. *démission*, resignation of an office—from L.]: a lowering; degradation; in *Scot.*, the laying down or resignation of an office.

DEMIURGE, n. *dĕm'ĭ-ėrj* [Gr. *dēmĭour'gos*, one working for the people: L. *demĭur'gus*, a chief magistrate—from Gr. *demĭŏs*, of or belonging to the people; *ergon*, a work; hence a workman]: in the cosmogony of the Gnostics, the creator or former of the world of sense, an agent (a supposed emanation from the one self-originated Being), employed for the purpose of creating the world. He was conceived as the archon or chief of the lowest order of the spirits or æons of the pleroma (see ÆON): mingling with chaos, he formed in it a corporeal animated world. He created man, but could impart to him only his own weak principle, the *psyche* or sensuous soul; therefore the highest, the really and only good God, added the divine rational spirit or *pneuma*. But the power of evil in the material body, and the hostile influence of the merely sensuous Demiurge, prevented the development of that higher element. The Demiurge holding himself to be the highest God, could not bring his creatures to the knowledge of the true Godhead: the Gnostics held that such a Demiurge was the Jehovah of the Jews, and that he gave them the imperfect law of Moses, which promised merely a sensuous happiness, and even that not attainable; and that against the spirits of the *hyle*, or world of matter, he sent only a psychical, and therefore powerless Messiah, the man Jesus. See GNOSTICS. DEM'IUR'GIC, a. *-ėr'jĭk*, pertaining to creative power.

DEMIVOLT, n. *dĕm'ĭ-vŏlt* [F. *demi-volte*]: one of the seven artificial motions of a horse, in which he raises his forelegs in a particular manner.

DEMMIN, *dĕm-mēn':* town of Prussia, on the river Peene, on the borders of Pomerania and Mecklenburg; lat. 53° 50′ n., long. 13° 1′ e. Beside the town proper, D. comprises three suburbs. It has four public squares and a town-house, and manufactures of woolens, linens, hats, and leather. It has also distilleries and breweries, and some trade in tobacco, gloves, etc. D., which is a place of some antiquity, was a walled and fortified town during the 12th c. It suffered considerably during the Thirty Years' War, previous to which it was of much more importance than it has since been. Pop. (1880) 10,507.

DEMOBILIZE, v. *dē-mŏb'ĭl-īz* [L. *de*, down, and *mobilize*]: to dismiss and send to their homes troops that have been employed on active service: see MOBILIZE.

DEMOCRACY, n. *dĕ-mŏk'ră-sĭ* [Gr. *dēmokrătĭă*, democracy—from *dēmos*, the people; *kratĕō*, I am strong, I reign as a sovereign]: government by the people; a form of government in which the supreme power is exercised by the people collectively. DEMOCRAT, n. *dĕm'ŏ-krăt*, a friend to popular government. DEM'OCRAT'IC, a. *-krăt'ĭk*, or DEM'OCRAT'ICAL, a. *-krăt'ĭ-kăl*, popular; pertaining to government by the people. DEM'OCRAT'ICALLY, ad. *-lĭ*. DEMOCRATIZE, v. *dĕ-mŏk'ră-tīz*, to render democratic. DEMOC'RATI'ZING, imp. DEMOC'RATIZED, pp. *-tīzd.*—It is interesting to trace the progress of the idea of *democracy* which has now attained such breadth and prominence. In Greece, whence we derive the name, it was understood to mean a commonwealth so constituted that the power was exercised by the body of the citizens (the *demos*), and not by an individual, or by a dominant caste. Democracy thus stood opposed both to monarchy and to aristocracy. Most of the republics of Greece, especially that of Athens, were democracies in this sense. The name did not at all imply the notion of an absolutely equal right in all citizens, still less in all men, to the exercise of political power. Neither the total absence of rights of all kinds on the part of the larger half of the population, the slaves, nor the distinctions recognized by law among citizens proper (e.g., the exclusion of the poorer citizens from office under the Solonian constitution at Athens), were considered incompatible with the nature of a democracy; though in regard to inequalities among citizens, the continually growing force of the democratic principle tended to their gradual extinction, and to the transference of power to the mass of citizens without distinction. Aristotle regarded this as an encroachment of *ochlocracy* ('mobocracy'), the degenerate form of democracy, or democracy unmixed and unchecked. Or more frequently, he speaks of democracy as the degenerate form of 'the polity' (Gr. *politeia*). The polity with him was the form where the many govern for the common benefit.—*Polit.* III. chap. 5; IV. chap. 6.

In modern history, we meet at the threshold a state of society which may be called democratic. Among the German nations, there was an almost perfect equality of all freemen (i.e., all that were not slaves), and real self-government exercised by these freemen in each separate tribe. For, the personal distinction enjoyed by certain families gave them no privileges over the other freemen, and where royalty existed, it could hardly be said to rule, since the king could do nothing without the concurrence of the assembly of free men, nor did he reign by mere birthright, but required the confirmatory choice of the people.

This condition of general liberty and equality gave place gradually to one quite opposite. Through the growth of the Feudal System (q.v.), the vast majority fell into a more or less abject dependence upon a privileged minority. The mass of former freemen, now sunk into serfdom, were hardly distinguishable from those actually slaves, whose position on the contrary had now become less dependent. The dominant class, the nobility, branded all that did not belong to themselves as 'people,' 'commonalty,' 'canaille.' Thus the term 'people,' which in the ancient republics implied the rights of citizenship, came to denote the masses that were without rights. The distinction of the dominant class from the mass of the people rested chiefly on two points—exclusive occupation in war, and the free possession of land, which was granted for warlike service alone.

But within this system of graduated dependence, from the monarch down through the aristocracy and their retainers in various degrees, there sprang up slowly an opposing element, which, as originating in the mass called the people, may be designated as democratic. It was not so much a new element, as the resuscitation of the old Roman municipal life, which had never altogether become extinct. It was naturally in the cities that this fresh element first manifested itself. Here, instead of a lord with a group of dependents, there arose compact communities of men with equal interests, equal rights, and self-government. At the same time, a new material interest, that of movable property, the product of industry and commerce, began to claim recognition together with territorial possessions and nobility. In England, as early as the Anglo-Saxon times, a merchant who had made three voyages ranked with a thane; and soon after the Norman Conquest, the cities were represented in parliament on an equal footing with the warlike aristocracy. This took place later on the continent, and never to the same extent, except in the cities of Lombardy and Flanders, where, at an early period, the citizen element entered the lists with the feudal and warlike. Even within the cities, the same contest was carried on between aristocracy and democracy. At first, it was only those carrying on commerce on a large scale that asserted their right to take part in the municipal government of the towns; but the trades or guilds, mercantile and artisan, soon set up the same claims. These claims, pertinaciously prosecuted, often led to bloody contests, but sooner or later were everywhere victorious. Thus was the basis of democracy widened; though the guilds also did not fail to manifest an aristocratic and exclusive spirit toward the body of the people not belonging to them, and with their restrictions and monopolies acted oppressively to the country population. It was not so easy for the rural population to break the bonds of feudal subjection in which they were held, or to acquire any political standing. Isolated attempts to throw off the yoke, by peasant insurrections and wars, failed, and resulted only in increased oppression. The abrupt division between the feudal possessor of the soil and the serfs under him continued long everywhere except in England. There the rigor of the relation began early to give way, and the transition was effected so gradually and peaceably that the English historian cannot say exactly how or when. For the greater part of the continent, it was not till the French Revolution in 1789, and the impulse given by it to legislation in other countries, that the agricultural population acquired an approximate freedom and equality with other classes.

Thus had one part after another of that 'people,' so oppressed and contemptuously thrown into the background by the dominant class in the middle ages, emerged from bondage, and successfully asserted a participation of rights, formerly the privileges of a single class. The aristocratic principle of feudal society, the principle of exclusion, privilege, of the subjection of the majority to a minority, had given way to the democratic principle of the equal rights of all classes, of all callings and employments. But the development of the democratic principle was not yet complete. Those who had made good a position in the state by the side of the feudal aristocracy, formed in their turn an exclusive class, taking their stand on the ground of certain material advantages. Thus, the merchants, as representing large masses of capital; the guilds, with their privileged industry; the agriculturists, as possessors of land, however little: all these interests formed another aristocracy within the general democracy. They were democratic in their origin, and as compared with the class that had formerly been exclusively privileged; but in another view they were aristocratic, since there still remained outside a numerous body which they, instead of admitting to political power with themselves, rather repelled, and treated much as the nobility had treated themselves. This residuary mass, which now came to be chiefly designated by the name 'people,' comprehended all those who possessed no capital, no privileged trade or calling, no land—nothing, in short, but their personal powers and capacities for work. This class forms at the present day by far the most numerous portion of the population in nearly all the civilized states of Europe. The designation 'people,' intended to be appreciative, is taken by them in the very opposite sense, and they ground upon it their claim to rule the state, as being properly the people, the numerically strongest class of the community. The preference given to the class of possessors, they look upon as groundless and absurd, just as these had judged of the nobility; they therefore claim perfect equality with them, especially in the exercise of the highest political rights. It is from this point of view that universal suffrage and the rule of mere numbers, without regard to possessions or other conditions, has been proclaimed as a self-evident consequence of the democratic principle—the claim for the extreme and ultimate political development of the democratic principle without check or balance.

With this there is connected in many quarters an extension of the idea into the social realm. The same principles, it is said, that have dictated political reformations, call for a remodelling of the social arrangements of mankind; that the possessors of property, the *bourgeoisie*, ought to be deprived, not only of the political privileges that they have hitherto enjoyed, but also wholly or in part of the material basis of those privileges, their property, so as to produce a perfect equality, political, material, and social, of all classes. This gives rise to a division of the democrats of the present day into two parties: the purely democratic party, aiming at securing only the full political consequences of the democratic principle—universal suffrage, with the absolute equality of social rights; and the democratic and socialistic party, who look upon the attainment of political rights as only a means of ultimately securing the universal, social, and material equality of men.

There seems, however, a fundamental error in thus treating the relation between the possessionless class and the possessors as analogous to that between the serfs and lords of feudalism. The contest of democracy against feudalism was not primarily so much for equal rights as for this—that among the same people mere birth should not make one man privileged, and a ruler, while another was made destitute of all rights, and bound to obey. That old contest was for personal freedom, the right for every man to use his powers for his own behoof, and not for that of a master; the right to the free possession of land, etc. Participation in political rights was prized chiefly as a guarantee for securing this personal and social liberty. But there is now no such absolute distinction between possessors of property and non-possessors, as between the nobleman and *roturier* of the middle ages: the two classes run imperceptibly into one another. Still less does the one class exercise any right of controlling the personal freedom of the other in respect of labor and acquisition, as was the case in villenage and feudal servitude. Possession has endless gradations, and in the present day, he who has nothing at the outset often becomes a capitalist: and the reverse often occurs. There may be other and strong reasons for wishing that there were less abrupt differences of possession, and greater social equality between the lower and middle classes than society actually presents (see SOCIALISM); but this by no means follows necessarily from the notion of democratic equality. All that this notion requires, is the removal of all privileges that destroy the unity and homogeneity of a nation, the establishment of complete personal and social liberty, and of the equality of all in the eye of the laws; and, in regard to political rights, a direct participation in the government of the state, under such a form of constitution as will exclude no fixed class of citizens as such. All this, however, seems quite compatible with making the exercise of the different political functions dependent, in the case of each individual, on certain guarantees, and with not admitting the whole body of the people to share in the government of the commonwealth at once, but only by natural gradations in proportion as increasing culture renders a wider circle capable of such functions. England and Belgium are set forth by some as historical illustrations of the way in which the real and steady progress of the democratic principle is best secured.

In France, the feudal principle, instead of a timely compromise with the democratic, as in England, came to a struggle with it of life and death. The consequence was that victorious democracy, instead of seeking to satisfy the practical wants of society first, and leaving the theoretical to be attained gradually, undertook to reorganize at one stroke the whole political and social fabric. In Germany, things took at a little later period a similar course. In Norway, the democratic element was never so completely crushed as in other parts of the continent, and that form of society is favored by the means and style of living, which are extremely simple, and are based on a nearly equal division of the soil.

The case of the United States is unique: the foundation of the state structure was to be laid on a clear site, and the first page of the history to be written. Those who came together to form the new community were personally perfectly free and equal, and the local circumstances were such as to favor the exercise of this liberty and equality, by rendering any very great disparity in material means impossible. In such circumstances, the construction of a largely democratic order of society could proceed without struggle, and without any dangerous straining of the principle. There no one looks upon the restriction of the franchise to residents as an infringement of the democratic principle, as in strict theory it is. Likewise, in the days of slavery the immense and terrific infraction of the democratic principle by the general exclusion of negroes from the franchise, and even from all rights of personal liberty and self-ownership, was not recognized as a denial of the democratic principle. Similarly, the present exclusion from the franchise of the majority of the population—women, minors, idiots, criminals—though certainly a restriction on the pure democratic idea, is not so regarded generally. The democratic tendency, however, is shown in a wide movement to confer the ballot on women; of which the result may not now be predicted further than to say that so soon and so far as the majority of women demand the ballot, it will be granted them, thereafter to be withdrawn by law only so far as they shall practically fail to use it. For while in the immortal words of Pres. Lincoln, the U.S. govt. is and will remain "a government of the people, by the people, for the people,' the term 'people' never has been and will not be interpreted on the theory of a strict unchecked democracy. In fact, the United States can be called a democracy only by comparison with monarchies and aristocracies: it is a *federal republic* of distinct commonwealths in firm compact as a nation. See REPUBLIC.

In the development of democracy in modern times, circumstances have directed its attacks rather against the aristocratic, than against the monarchical principle. At one time, indeed, monarchy, in its struggle with the aristocracy, found its natural allies in the democracy. The princes, striving to break the power of the great nobles, which limited their own, often called in the help of the democratic element, partly by conferring privileges on bodies of the people, such as city corporations, and partly by attaching individuals of the non-privileged classes to their personal service, and appointing them to powerful positions in the state. The road to power and distinction was, it is true, already open to individuals of the democracy through the church, whose dignities and privileges were not confined to the noble by birth, but were accessible to personal capacity. At a later period, the universities also, especially in the faculty of law, formed for the democracy stepping-stones to power, from which they sometimes overtopped the aristocracy of birth. And when the princes—at their head the Louis of France—aiming at absolute authority, sought to find a counterpoise to the feudal nobility, by creating a bureaucratic state machinery, and favoring intelligence in every form, the very widest path was opened to the democratic element for attaining influence and distinction. It is true that all this was at the cost of its most essential principle; for the equality created by a levelling absolutism, raising the low and depressing the high, was nothing more than an equality of dependence upon the one absolute master of all.

The relation between democracy and monarchy was different where the ruler came to be limited as the chief officer of the nation. Such a limitation of the power of the monarch, by means of a representative system not confined to the privileged classes, but embracing also at least the citizens of towns, was in itself a victory of the democratic principle. As the circle of this popular representation widens, and its influence in the state increases, such a monarchy becomes more and more democratic in all its institutions.

In a purely democratical state, the people may exercise their power in either of two ways—directly, or through delegates: in one case, the democracy is said to be absolute; in the other, representative. The absolute or direct form prevailed in the republics of antiquity; political representation, in fact, seems a modern idea. The same is the case with the original Swiss cantons, where almost all public business is discussed in a full assembly of the people. In Switzerland generally, the representative form is now preferred. It is also carried out in the states of North America, and was adopted in the French republic of 1848. The absolute form, in fact, is adapted only for small communities with a population concentrated as to space, and differing little in mode of life or culture. Such are the rural towns in New England, and in some other states, which are perfect models of wise direct democratic government—miniature democracies, at once the nurseries and the fortresses of liberty; in which respect their town-meetings are worthy of study. But such communities seem to fill the natural limits of absolute direct democratic polity. According to some, the representative system is inconsistent with the principle of democracy, as the will of the people is liable to be falsified and crossed by the very organs that are to carry it into execution. It is rather an advantage, however, that the first impulse of the public will, sometimes passionate and short-sighted, should be tempered and enlightened, by passing through a series of media on its way to action; and the hold which the constituency have upon their representatives, by means of frequent reelection, and in other ways, is sufficient guard against any defeat of a steady, earnest, public conviction.

M. de Tocqueville and Mr. J. S. Mill applied themselves to setting forth the evils and dangers of democracy, which they—the latter especially—both regarded not only as a system that must inevitably extend itself, but as the ideally perfect form of government. Mr. Mill was at great pains to show that self-government by a representative democracy is what develops, in the greatest degree, the good mental qualities, both intellectual and moral, of the governed, and that it is desirable gradually to extend this participation in the acts of government till it include the entire adult population, male and female. On the other hand, there are two sources of evil to which we are liable, more or less, as democracy approaches to the term of universal suffrage, and which are to be provided against by proper constitutional arrangements. The first of these is the insufficient mental qualifications of the governing body for the highly complicated work of government. Public administration is a profession, like engineering, medicine, or the law, and demands, no less than these, a special training and devotion of mind. In monarchies and aristocracies, the management of affairs is in the hands of a few, who make it the business of their life, and acquire the requisite skill for doing the work well. In a democracy, this advantage is lost, except so far as the details of administration are left to skilled officials; the public assembly merely retaining the power of checking and controlling those officials, and of determining general rules of policy.

The other danger is the predominance of the laboring class, by virtue of their numbers, over the class made up of employers of labor, and of those generally who have had the advantage of wealth and education. When there are two or more classes in the community with conflicting interests, the desirable arrangement is, that their power should be equally balanced, so that no party could carry a point by political position alone, or without appealing to the reason, and sense of justice, of representative members of the other parties. But with universal suffrage, the laboring-class would be predominant in numbers; and so serious did Mr. Mill deem the danger of class legislation as a result, that he thought it necessary to provide a remedy in the shape of granting a plurality of votes to certain persons, especially those distinguished by education, so as to restore the balance.—*Considerations on Representative Government*, chap. viii. But to many profound students of politics such expedients do not commend themselves. The only efficient safeguards against the dangers of universal suffrage must be either found or made in the sphere of moral motives. See SUFFRAGE.

DEMOCRATIC PARTY: see POLITICAL PARTIES.

DEMOCRITUS, *dē-mŏk'rĭ-tŭs:* illustrious Greek philosopher; b. at Abdera, Thrace, about B.C. 470 or 460. The date of his death is uncertain. He lived, however, to a great age. Of his life, little is known. The statement that he was first inspired with a desire for philosophic knowledge by certain Magi and Chaldæans whom Xerxes had left at Abdera, on his Grecian expedition, is as untrustworthy as that which represents him as continually laughing at the follies of mankind. His extensive travels, however, through a great portion of the East, prove the reality of his desire for knowledge, as does also his ceaseless industry in collecting the works of other philosophers. D. was by far the most learned thinker of his age. He had also a high reputation for moral worth. He appears to have left a strong impression of his disinterestedness, modesty, and simplicity on the mind of the community, for even Timon the scoffer, who spared no one else, praised him. Only a few fragments of his numerous physical, mathematical, ethical, and musical works are extant. These have been collected by Mullach (Berlin, 1843). Cicero praises his style, and Pyrrhon imitated it.

D.'s system of philosophy is known as the *atomic system*. Its essence consists in the attempt to explain the different phenomena of nature—not like the earlier Ionic philosophers, by maintaining that the original characteristics of matter were *qualitative*, but that they were *quantitative*. He assumes, therefore, as the ultimate elementary ground of nature, an infinite multitude of indivisible corporeal particles, *atoms* (see ATOM), and attributes to these a primary motion derived from no higher principle. This motion brings the atoms into contact with each other, and from the multitudinous combinations that they form, springs that vast and varying aggregate called *nature*, which is presented to our eyes. D. did not acknowledge the presence of *design* in nature, but he admitted that of *law*. 'The word *chance*,' he says, 'is only an expression of human ignorance.' He believed strictly in secondary or physical causes, but not in a primary immaterial cause. Life, consciousness, thought, were, according to him, derived from the finest atoms; those images of the sensuous phenomena surrounding us, which we call mental representations, were, according to him, only material impressions, caused by the more delicate atoms streaming through the pores of our organs. D. boldly applied his theory to the gods themselves, whom he affirmed to be aggregates of atoms, only mightier and more powerful than men. Strange to say, the ethical system of D.—in spite of the grossness of his metaphysics—is both pure and noble. The fragments of his writings that remain contain beautiful, vigorous, and true thoughts concerning veracity, justice, law, order, the duties of rulers, etc.; while, in a spirit not alien to the teaching of Christianity, he looks upon an inward peace of heart and conscience as the highest good, the end and aim of all virtuous endeavor.

DEMOGORGON, n. *dē'mō-gŏr'gŏn* [Gr. *daimon*, a deity; *Gorgōn*, a being whose head was covered with hissing serpents, and whose appearance was so frightful as to turn the spectator into stone; also *Gorgŏnēs*, three women so formed; *gorgos*, terrible]: a deity of mysterious powers, regarded with abject terror, even to the fear of mentioning his name, by the anc. Greeks and Romans, and other inhabitants of Europe: it was believed that he was to be the conqueror of Jupiter. *Note.*—Some suppose the word to be a corruption of the Gr. *Demiourgos* of the oriental systems of magic: see

Demiurge. The dreaded 'evil eye' may have had its origin in the abject fear of this mysterious deity.

DEMOISELLE, n. fem. *dĕm'wâ-zĕl'* [F.]: a young lady; a damsel.

DEMOISELLE, *dĕm'wâ-zĕl'* (*Anthropoides*): genus of birds of the family *Gruidæ* (cranes), differing from the true cranes in having the head and neck quite feathered, and the *tertials* of the wings elongated and hanging over the tail, so as in some species to reach the ground. The D., or NUMIDIAN D. (*A. Virgo*), is about 3 ft. in length from the point of the bill to the tip of the tail, and the top of its head is about 3½ ft. from the ground. It is remarkable, as are all its congeners, for elegance and symmetry of form, and grace of deportment. The general color of its plumage is gray, but the sides of the head are adorned with two elegant white tufts, formed by elongation of the ear-coverts, and a tuft of blackish feathers hangs down from the breast. The D. is an African bird, but visits Greece and other parts of the south of Europe. To the same genus belongs the beautiful Stanley Crane (*A. paradisæus*) of the E. Indies, a larger and taller bird, with very long tertials. Notwithstanding its large size, it seems to feed chiefly on the insects of marshes, which it takes when on wing.

Demoiselle (*Anthropoides Virgo*).

DEMOIVRE, *dĕh-mwâvr'*, ABRAHAM: 1667–1754; b. Vitri, Champagne: mathematician. Of French extraction, he spent most of his life in England, whither he fled, with many others, for shelter in 1685, on the revocation of the Edict of Nantes. He long supported himself by private tuition and public lecturing, and, toward the end of his life, by answering questions in chances, play, and annuities, most of his responses, it is said, being given at a coffee-house in St. Martin's Lane, where he passed much of his time. The appearance of Newton's *Principia* incited him to increased devotion to mathematical studies, to which he had always been disposed, and at last he ranked among the leading mathematicians of his time. He was a member of the Royal Societies of London, Berlin, and Paris. The *Philosophical Transactions* of London are enriched by many contributions from his pen; and he was so esteemed by the Royal Soc., that they judged him a fit person to decide the famous contest between Newton and Leibnitz for the merit of the invention of fluxions. He died at London. Among his published works are *Miscellanea Analytica de Seriebus et Quadratis*, etc. (1730, 4to); a work on *The Doctrine of Chances* (1718 and '38), dedicated to Sir Isaac Newton; and another on *Life Annuities* (3d edit. 1750). D.'s name is well known from its association with a useful trigonometrical formula—viz., that whatever be the index n, $\cos n\theta + \sqrt{-1} \sin n\theta$ is a value of $(\cos \theta + \sqrt{-1} \sin \theta)^n$.

DEMOLISH, v. *dĕ-mŏl'ĭsh* [L. *demolīrī*, to demolish—from *de*, *molĭŏr*, I build or heap up: F. *démolir*, to demolish; *démolissant*, demolishing; It. *demolizione*, an overturning]: to throw or pull down; to destroy; to rase; to ruin; to dismantle. DEMOL'ISHING, imp. DEMOL'ISHED, pp. *-ĭsht*. DEMOL'ISHER, n. *-ėr*, one who. DEMOLITION, n. *dĕm'ŏ-lĭsh'ŭn* [F.—L.]: the act of overthrowing; destruction. Demolition, in military operations, is part of the duty intrusted to the engineers, who proceed in it on strict scientific rules.

DEMON, n. *dē'mŏn* [F. *démon*—from L. *dæmon;* Gr. *daimon*, the tutelary genius of a city or a man, the divinity]: in ancient belief, one of a race of beings intermediate between deity and humanity—some good, some bad: most frequently in modern usage, an evil spirit; a bad genius. DE'MONSHIP, n. office of. DE'MONISM, n. *-ĭzm*, belief in demons. DE'MONOL'ATRY, n. *-ŏl'ă-trĭ* [Gr. *latreia*, service, worship]: worship of demons. DEMONIAC, a. *dĕ-mō'nĭ-ăk*, or DEMONIACAL, a. *dĕm'ō-nī'ă-kal*, pertaining to demons or evil spirits; produced by evil spirits. DEMONIAC, n. *dĕ-mō'-nĭ-ăk*, one possessed by a demon. DE'MONI'ACALLY, ad. *-lĭ*. DEMONOLOGY, n. *dē'mŏn-ŏl'ŏ jĭ* [Gr. *logos*, a discourse]: a treatise on evil spirits. DEMONIAN, a. *dĕ-mō'nĭ-ăn*, in *OE.*, having the nature of a demon.

DEMONETIZE, v. *dē-mŭn'ĕ-tīz* [F. *démonétiser*, to alter the value of a coin, to call it in—from L. *de*, down; *monētă*, the mint, money]: to deprive of value as a medium of currency, as a coin; to change the standard of currency from one denomination to another, as from silver to gold, or from gold to silver. DEMON'ETIZA'TION, n. *-tī-zā'-shŭn*, the act of depriving of value. REMONETIZE, v. *rē-mŭn'ĭ-tīz* [L. *re*, back, again]: to restore to its former position in the currency. REMONETIZATION, n. *rē-mŭn'ĕ-tī-zā'-shŭn*, restoration to its former position in the currency as a coin; the act of reverting to a former metallic standard of the currency, as from *gold* to a former standard of *silver*.

DEMONIACS, *dē-mŏ'nĭ-aks* (*dæmoniaci*, *obsessi*): persons whose bodies and whose wills are possessed and controlled by demons. Doubtless the name may have been given by the Jews, anciently, to persons also who were afflicted with epilepsy, hypochondria, or insanity, diseases frequent in the East; such persons were considered as taken possession of by evil spirits. Spells and exorcisms, in consequence, took the place of the healing art in reference to such as were supposed to be demonized, and the Jewish exorcists (demon-banishers) alleged, according to Josephus, that they possessed the necessary magic formulas, wonder-working roots, etc., which had been handed down from antiquity. Other nations, e.g., Persians, Greeks, Romans, held the same belief as to demoniacal possession; but it was more vital and universal among the later Jews than among other nations, on account of the revelation of a holy God which caused in them a deeper consciousness of sin, and on account of their belief as to an organized kingdom of evil, with a chief spirit (Satan) at its head. By reason of their conviction of the mysterious connection between evil and Satan, they expected of the Messiah, the Anointed of God, that he would possess 'power' over demons. While this fundamental national belief would unconsciously prepare the contemporaries of Christ for regarding his healing in such cases from a *religious* rather than a *scientific* point of view, it does not seem possible from the plain narratives of the gospel, and especially from Christ's words of personal address to the demons, to exclude from the record of these mighty works a direct countervention by Christ of the power which evil spirits had usurped in the physical system and in the realm of the will over the persons whom he healed. He is recorded as healing such persons not by medicines, but by authority which the spirits knew and obeyed. Modern physical science, which has little room for any spiritual facts or powers, and sometimes forgets or denies that man himself is a *spirit* embodied, largely denies demoniacal possession, and so far tends to discredit the record in the life of Christ. But it should be noted that one may fully accept the New Testament record on this difficult theme, without necessarily affirming or denying the ancient view which ascribed to the power of evil spirits what we now recognize as diseases.

DE'MONS: according to ancient belief, spirits which exercise an influence in the sphere in which man lives. Their dignity and character both have changed greatly in the course of time. Homer calls the *gods* demons, and *daimoniakos* is with him equivalent to *divine*. Hesiod affirms that there are in the air 30,000 demons or ministering spirits, who were the souls of men in the Golden Age; but a proper classification of these is found first in the Pythagorean and Neo-Platonic systems. Aristotle separates the immortals into gods and demons; mortals, into heroes and men. Plato, from whom Aristotle probably received the hint of his division, says in his *Symposium* that 'the demon is a middle intelligence between God and man, and the uniting link which completes the chain of being.' In other places, he informs us that they inhabit the air, wander through the sky, hover over the stars, and tarry on the earth. They also see the hidden issues of the future, and can alter them at their pleasure. Every mortal receives at his birth a particular demon, who accompanies him to the end of his life, and bears his soul to the place of purification and punishment. In general, it may be said, that the Greeks included the divinity or the deities among the demons, so far as they arranged and disposed the dissimilar fortunes of men. In reference to the actions ascribed to them, the demons were divided into *good* and *bad—agathodaimones* and *kakodaimones.* These evil demons were not, however, originally supposed hostile to the divinity or supreme demon. They came from him, and carried out his purpose as truly as the good demons. This was the belief of the earlier Jews also, as we find, for example, from the history of Saul, into whom God repeatedly sent an 'evil spirit,' i.e., a demon, in the classical and not in the mediæval sense of the term. The demonism of the Romans consisted chiefly in the worship of departed spirits: see LARES: MANES: PENATES. The origin of the doctrine of demons is to be sought in the East. In the teaching of the Hindus, who, besides the highest Deity, Brahma, recognize a countless number of divine agents or messengers, the demons are called *deitjas.* In Parseeism, or the religion of Zoroaster, however, this doctrine is found in its most systematic and elaborate development. Indeed, the Persians and Jews *alone* among the nations of the Old World had the conception of evil spirits headed by a chief demon, a Satan, who was over them as a god. To the genii or demons in the kingdom of Ormuzd (Light), who are called *Izeds,* stand opposed the genii in the kingdom of Ahriman (Darkness), who are called Dews. According to the belief of the Egyptians, the circuit of the world (the sea, the earth, the air) was filled with demons, who ruled the elements, exercised mysterious influence over stones, metals, and plants, and had the souls of men in their power. Although the belief in demonism came to Greece from various countries, and by various channels, yet the principal channel by which they received it was through Egypt. The Jews derived it—at least to a great extent—directly from the Persians, during the time of the Babylonian captivity; and though they were acquainted with 'angels' from an early period, angelology, beyond all question, received its first elaborate treatment after the return from exile. The dualism which characterizes the system of Zoroaster made itself conspicuous then. According to the Jewish demonology, —much of which was from some other source than their Scriptures—there were seven good demons who formed the council of Jehovah, and ever stood before his throne, while the evil demons have at their head Satan or Asmodi. After the Jews had, under the Seleucidæ and Ptolemies, entered into extensive commercial relations with the Egyptians and Greeks, especially in Alexandria, Græco-Egyptian conceptions were associated with those derived from Persia. When Christ made his appearance in the world, the Jewish conception of a demon as an 'evil spirit,' *not* from God, had become definitely fixed and popular. This narrowing of the application of the word may have partly originated in the wish to glorify Judaism at the expense of paganism. It would gratify the national pride, which was strongest when it had least to boast of, to include the *demons*, i.e., the spirits both good and bad, of all the surrounding Greek-speaking nations, in one black category, and so make them stand as the representatives of evil. The early Christian writers, instead of denying the existence of the heathen gods, turned them into demons, who, acting under the inspiration of their wicked master, had cheated the souls of men, and so made them also worship Satan unawares: see DEVIL. The doctrine of the early church concerning the fall of the demons, based on Genesis vi. 2, and concerning their activity, seems to have mingled Jewish and Platonic notions, Christianized however by the belief that all their action is controlled by the supreme power of the Son of God. Among the Germanic races, during the middle ages, the idea of a person's being taken possession of by demons, led to the other idea of a covenant with the devil, of which the legend of Faust is a well-known example. See UKERT, *Ueber Dämonen, Heroen und Genien* (Leip. 1850); Conway's *Demonology and Devil Lore* (1878).

DEMONSTRATE, v. *dĕ-mŏn'strāt* or *dĕm'ŏn strāt* [L. *demonstrātus*, pointed out, shown fully—from *de*, *monstro*, I point out: F. *démontrer;* OF. *demonstrer*]: to show or prove to be certain; to prove beyond the possibility of doubt; to show the dissected parts of a body for the purposes of instruction. DEMON'STRATING, imp. DEMON'STRATED, pp. DEMONSTRATOR, or -TER, n. *dĕm'ŏn-strā'tėr*, one who; in *anat.*, one who exhibits and explains the parts of a body when dissected. DEM'ONSTRA'TION, n. *-strā'shŭn* [F.—L.]: the highest degree of evidence; certain proof to establish a fact or proposition beyond the possibility of doubt; an exhibition of the dissected parts of a body; a real or feigned movement of troops against the enemy, either to lead him to develop his force, thus showing his strength, or to lead him to divide his force as if to meet attack from various quarters. DEMONSTRABLE, a. *dĕ-mŏn'stră-bl* [F.—L.]: that may be proved beyond doubt or question. DEMON'STRABLY, ad. *-blĭ*. DEMON'STRABLENESS, n. *-bl-nĕs*. DEMON'STRATIVE, a. *-stră-tĭv*, proving by certain evidence; energetically expressing feelings or sentiments; forcibly frank. DEMON'STRATIVELY, ad. *-lĭ*, in a manner beyond doubt; in a manner energetically frank. DEMON'STRATIVE'NESS, n. DEMONSTRATIVE PRONOUN, a pronoun used to point out with precision the particular object to which it refers; the demonstrative pronouns are *the*, *this* (pl. *these*), and *that* (pl. *those*).—SYN. of 'demonstrate': to show; exhibit; display; indicate; evince; argue; manifest.

DEMONSTRA'TION in Mathematics: proof of any proposition which excludes doubt; such are demonstrations of the propositions in Euclid's *Elements*. The method of demonstration in mathematics is the same with that of drawing conclusions from principles in logic, and is usually syllogistic, the premises being omitted to be stated at each turn. The principle of *reductio ad absurdum* also is employed. See Reasoning: Syllogism.

DEMONTE, *dā-mŏn'tā:* town in the s.w. of Piedmont n. Italy; on the Stura, 15 m. s.w. of Coni. Pop. 6,000.

DEMORALIZE, v. *dĕ-mŏr'ăl-īz* [F. *démoraliser*, to corrupt the morals—from F. *dé* for L. *dis*, apart; *morale*, morals: L. *de*, *mōrēs*, usages, customs]: to corrupt morals; to destroy or lessen moral qualities; to cease for a time to be under the regulating control of the usual social and moral influences. **Demor'ali'zing**, imp. **Demor'alized**, pp. *-ăl-īzd.* **Demor'aliza'tion**, n. *-ī-zā'shŭn*, corruption of morals; the state or condition of an army after a defeat when confidence and discipline are in abeyance; the state of any body of individuals when the usual social restraints and moral influences have ceased for the time to exercise the usual control.

DE MORGAN, *deh mor'gan*, Augustus: 1806–1871, Mar.; b. in the small Indian island of Madura, off the n.e. coast of Java. His father was an officer in the British army. He was educated at Trinity College, Cambridge, and took his degree B.A. 1827, when he was fourth wrangler. He was appointed first prof. of mathematics in the Univ. College, London. In 1831, he resigned, but was reappointed 1836, and continued in that capacity till his death. His writings are very numerous. Besides being a mathematician of the first order, he was extensively and minutely versed in the history of mathematical and physical sciences. He also applied himself to the development of the Aristotelian or 'Formal' Logic, to which he gave so symbolical a shape as to make it seem like a branch of Algebra. He wrote likewise on the calculation of Insurances and on the Decimal Coinage. The following are a few of his works: *Elements of Arithmetic* (1830); *Elements of Algebra, preliminary to the Differential Calculus* (1835); *Elements of Trigonometry and Trigonometrical Analysis, preliminary to the Differential Calculus* (1837); *Essay on Probabilities, and on their Application to Life Contingencies and Insurance Offices* (1838); *Formal Logic, or the Calculus of Inference necessary and probable* (1847); *Arithmetical Books, from the Invention of Printing to the Present Time, being brief notices of a large number of works drawn up from actual inspection* (1847). De M. is also the author of treatises on the Differential and Integral Calculus; and contributed largely to the *Penny Cyclopædia.* See *Memoir of Augustus de M., by his Wife* (1882).

DEMOS, *dē'mos* [Gr. the people]: name of the districts in anc. Attica, which numbered first 100, afterward 174; each had its own assemblies and officials.

DEMOSTHENES, *de-mŏs'the-nēz:* greatest orator of Greece, and indeed of the ancient world: b. Athens. The date of his birth is doubtful. Fynes Clinton assigns it to B.C. 382; Thirlwall and other good authorities, to 385. He died B.C. 322. His father, a wealthy manufacturer, died early, leaving his fortune and children to the care of three guardians, who cruelly abused their trust. As soon as D. came of age, he resolved to prosecute at law these unfaithful stewards. He gained his case, but much of the property had been already squandered, and he recovered only enough to save him from poverty. His success in this and some other civil causes fixed his resolution to devote himself to public life; and he set himself to master the law and politics of his country with a labor and perseverance almost without parallel. His first care was to conquer the physical disadvantages under which he labored. His health was naturally feeble, his voice harsh and tuneless, and his action ungraceful. To strengthen his lungs, he used to climb steep hills, reciting as he went, or declaim on the shores of the sea in stormy weather. To improve his delivery, he took instructions from Satyrus the actor, and did not even disdain to study effects before a mirror. His feebleness of health he never fairly overcame, but he obviated the defects of his early training by the severest study for months at a time without interruption.

D. began to take part in public affairs in the 106th Olympiad, when he was between 27 and 30 years of age, and from that time till his death, his history is the history of Athens. The states of Greece were at this time miserably weak and divided, and had recklessly shut their eyes to the dangerous encroachments which Philip of Macedon was making on their common liberties. The first period of D.'s public life (extending over ten years from B.C. 356) was spent in warning his countrymen to abate their mutual jealousies, and unite their forces against the common enemy, whose crafty and grasping policy he exposed so nobly B.C. 352 in the oration known as the First Philippic. Three years later, Philip became master of Olynthus, the last outpost of Athenian power in the north, which, in a series of splendid harangues—the three Olynthiacs—D. had implored his countrymen to defend. Peace was now necessary for Athens; and D. was among the ambassadors sent to negotiate with the conqueror; but Macedonian gold had done its work, and D., as incorruptible as he was eloquent, saw with despair that Philip was allowed to seize Thermopylæ, the key of Greece, and become a member of the Amphictyonic League. The peace lasted six years, during which Philip's incessant intrigues were exposed and denounced by D. in orations hardly less remarkable for political wisdom than for matchless eloquence. The most important of these were the Second, Third, and Fourth Philippics; and the speeches on the 'Misconducted Embassy,' and 'The Affairs of the Chersonese.' When war broke out B.C. 340, D. introduced several important reforms into the army and navy, and showed such powers of vigorous administration, that Philip was baffled for a time. The struggled was closed in B.C. 338 by the battle of Chæroneia, which laid Greece prostrate at the feet of the Macedonians. Only once after that event did D. appear on the scene of his previous triumphs. But on that occasion he delivered, in defense of his friend Ctesiphon, his oration 'For the Crown,' which the almost unanimous verdict of critics has pronounced the most perfect masterpiece of oratory that ancient or modern times have seen. Æschines, his life-long enemy, against whom this speech was delivered, was so overwhelmed by it, that he quitted Athens, and spent the remainder of his life in exile In B.C. 324, D. was accused of taking part in a revolt against the Macedonian domination, and thrown into prison, whence he escaped, and fled into exile The death of Alexander the Great in the following year brought a gleam of hope to the Athenians; and D., recalled from exile, was again at the head of affairs. Once more the power of Macedon prevailed. D. was demanded up by the conquerors. Finding escape impossible, the hunted orator sought an asylum in the temple of Neptune, in the island of Calaurea. Before his pursuers overtook him, he had died, as was generally believed, of poison administered by his own hand.

The personal character of D. is one which it is scarcely possible to praise or admire too much. His dauntless bravery, the stainless purity of his public and private life, his splendid and disinterested patriotism, and his services as a statesman and administrator, entitle him to a place among the highest and noblest men of antiquity. On his merits as an orator, suffice it to say, that the educated of all ages subsequent have, with scarcely a dissentient voice, assigned him the highest place. Homer is not more clearly the prince of ancient poets, than is D. the prince of ancient orators.—The best of the earlier editions of D. are those of Taylor and Reiske, superseded by that of Bekker (1828). More recent are those of Baiter and Sauppe (1850), Dindorf (1867), and Whiston (1868). The translation of D. by Kennedy is scholarly.

DEMOTIC, a. *dĕ-mŏt'ĭk* [Gr. *dēmotĭkos*, pertaining to the people—from *dēmos*, the people]: pertaining to the people; applied to a variety of writing in common use among the Egyptians; a simplified form of the anc. Egyptian hieroglyphic writing. DEMOTIC ALPHABET: see HIEROGLYPHICS.

DEMOTICA, *dė-mŏt'ė-kâ:* town of European Turkey, province of Adrianople, 22 m. s. of Adrianople. It is on the Maritza, here navigable for small vessels, and is defended by a citadel. It contains an old palace, is the seat of a Greek bishop, and has manufactures of silks, woolens, and pottery. Charles XII. of Sweden, who, after the battle of Pultowa, first found a refuge at Bender, afterward removed to D., where he remained for some time. Pop. 8,000.

DEMPSTER, n. *dĕm'stėr*, or DEMSTER, or DEEMSTER [AS. *deman*, to deem, to form a judgment]: in the *Channel Isles* and in the *Isle of Man*, a name given to a judge; in *Scot.*, formerly an officer who was required to repeat the sentence pronounced by the court.

DEMPSTER, *dĕmp'ster*, JOHN, D.D.: 1794, Jan. 2—1863, Nov. 28; b. Florida, N. Y.: educator. He was a son of the Rev. James D., an associate of John Wesley, and losing his father when a child, became a pedler. He was converted 1812, entered the itinerant ministry of the Meth.

Episc. Church 1816, was a missionary in Buenos Ayres 1835–42, a founder of the Biblical Institute at Concord, N. H, and its prof. of theol. 1847–54, and founder of the Garrett Biblical Institute at Evanston, Ill., 1854, and senior prof from 1855 till his death. He received his degree from Wesleyan Univ. 1848.

DEMPSTER, *dĕmp'ster*, Thomas: professor, famous for learning; miscellaneous and voluminous writer: abt 1579–1625, Sep. 6; b. Muiresk, Aberdeenshire. He studied at Cambridge; went to France while young to perfect his education, and at Paris obtained a professorship in the college of Beauvais, where he showed a very quarrelsome temper, engaging, it is said, almost daily in some brawl. One of these unseemly disturbances resulted in D.'s having to retreat to England. He returned to France with a beautiful wife, whom he had married in England. Crossing the Alps, he obtained a second professorship at Pisa, with a handsome salary; but here, however, the infidelities of his wife marred his peace; and he removed to Bologna, where he became prof. of *belles lettres*, and where his wife completed her shame by eloping with 'one or more' of his students. Poor D. seems to have been fond of this wanton, for he took the trouble of attempting the capture of the fugitives. He failed; and died at Butri, near Bologna. D. wrote numerous treatises, among which was *Historia Ecclesiastica Gentis Scotorum*—a work in which his desire to magnify the merits of his country often induced him to forge the names of persons and books that never existed, and to unscrupulously claim as Scotchmen, writers whose birthplace was doubtful, or who were known to be natives of England, Wales, Ireland, and even France and Germany; nevertheless, the book has some value. It was reprinted for the Bannatyne Club 1829.

DEM'TER: see Deventer.

DEMULCENT, a. *dĕ-mŭl'sĕnt* [L. *demulcen'tem*, stroking down—from *de, mulcĕō*, I soothe gently]: softening; mollifying: N. that which softens; in *medicine*, any bland and lubricating liquid substances, taken by the mouth, for soothing irritation of the mucous membranes, and promoting the dilution of the blood, and the increase of the secretions. Demulcents are composed chiefly of starch (q.v.), or gum (q.v.), or of substances containing these, dissolved in water; sometimes also of oily matters, or the white of eggs, and other albuminous or gelatinous substances largely diluted. The decoction of althæa, or marsh-mallow, is a favorite form of demulcent.

DEMUR, v. *dĕ-mėr'* [F. *demeurer*, to stay—from L. *demŏrārī*, to delay—from L. *de, mora*, delay: It. *dimorare*]: to delay by raising doubts and objections; to hesitate; to pause; to scruple; in *law*, to dispute formally the sufficiency of the pleading on the other side: N. a pause; a scruple; hesitation as to the propriety of proceeding. Demur'ring, imp. Demurred', pp. *-mėrd'*. Demur'rer, n. one who; in *law*, an issue, raised on a question of law, between plaintiff and defendant, by which the progress of the suit is delayed. **DEMUR′RABLE**, a. *-ră-bl*, that may be demurred to. **DEMURRAGE**, n. *dĕ-mŭr′rāj*, an allowance made to the owners of a ship by the freighters for delay or detention in port beyond the time agreed upon: in the *railway clearing-house*, fixed charges for the detention of carriages, trucks, etc., belonging to another company.

DEMURE, a. *dĕ-mūr′* [F. *dès* or *de*, from; *mœurs*, manners or behavior: OF. *de murs*, of good manners—from L. *de*, of; *morēs*, manners]: grave; affectedly modest; bashful: V. in *OE.*, to look demurely or with affected modesty. **DEMURE′LY**, ad. *-lĭ*, in a manner affectedly modest. **DEMURE′NESS**, n. soberness; affected modesty.

DEMUR′RAGE, in the Law-merchant: allowance made to the master or owners of a ship, by the freighter, when she is detained in port by the latter beyond the specified time of sailing, for the freighter's convenience. A certain number of days, called running or working days, are allowed for receiving and discharging cargo, and it is usually stipulated in charter-parties that the freighter may detain the vessel, either for a specified time, or as long as he pleases, on paying so much *per diem* for over-time. All the ordinary causes of detention, such as port-regulations, the crowded state of the harbor, and the like, are at the risk of the freighter, and demurrage must be paid, though it be proved that the delay was inevitable by him (*Commentaries*, V. i. 431, Shaw's ed.). 'In short,' says Mr. Bell, 'the rule is, that during the loading or unloading of the ship, the merchant runs all the risk of interruptions from necessary or accidental causes; while the ship-owners have the risk of all interruptions from the moment the loading or unloading is completed.' But demurrage is not due where the delay arose from detention of the ship by a public enemy, or from hostile occupation of the port; and it cannot, of course, be claimed where the fault lay with the owners themselves, or the master, or crew of the vessel. The demurrage ceases as soon as the vessel is cleared for sailing, though she should be prevented from actually doing so by adverse winds. When the days of demurrage are limited by special contract, and the ship is detained beyond them, the sum due as demurrage under the contract will be taken as the measure of the loss for the further time which may be claimed in the form of damages. It will be open, however, to both parties to show, that the rate thus fixed *per diem* is either too high or too low. Where there is no stipulation beyond the ordinary agreement that the usual time shall be allowed for loading and unloading, the master will be entitled, when this period expires, either to sail or to claim damage for detention.

DEMUR′RER, in Law: exception taken by one party in a suit or action to the sufficiency in point of law of the case of the opposite party. *At Common Law*, each party might demur to the sufficiency of the pleading of the opposite party. The party whose pleading was demurred to might either amend or put in a joinder in demurrer. *A demurrer in equity*, like a demurrer in law, admitted the facts of the case, but stated objections to the form of the bill in Equity (q.v.), or the sufficiency of the plaintiff's case to sustain the remedy craved.

Demurrer to evidence is also a form of procedure which existed in both common law and equity practice. In the former it had long been almost obsolete; and in its place was substituted a motion for a new Trial (q.v.). It may arise on a trial at bar or at Nisi Prius (q.v.). It admits the facts proved, but objects that they are not sufficient to sustain the issue. In equity, a demurrer to evidence is where a witness refuses to answer a question put to him by direction of the court. The objection is then taken down in writing, and is argued before the judge by whom the interrogatories were settled.

Demurrer to a criminal indictment also is almost obsolete.

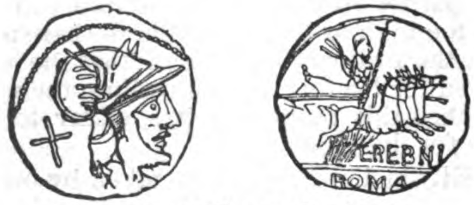
DEMY, n. *dĕ-mī'*, plu. **Demies**, *dĕ-mīz'* [F. *demi*, half—from L. *dimĭdĭum*, half]: a particular size of paper between royal and crown; in *printing-paper*, a demy sheet measures 22 inches by 17½; in *writing-paper*, 22 by 15½. **Demies'**, plu. the title of certain persons on the foundation of Magdalene College, Oxford—really a contradiction of L. *dĕmĭ-socĭŭs* = half a fellow, answering to scholars in other colleges.

DEMY-LAUNCE, n. *dĕm'ĭ-lâns* [L. *dimĭdĭŭm*, half; OE. *launce*, a lance]: in *OE.*, an anc. 'hobbler' or horseman in light armor.

DEN, n. *dĕn* [AS. *dene* and *denu*, a cave, a den: old Dut. *denne;* Ger. *tenne*, a floor]: a cave or hollow place in the earth; a cave; the lair of a wild beast; a place of concealment; a wretched dwelling-place.

DENAIN, *dė-năng':* town of France, dept. of Nord, on the left bank of the Scheldt, about five m. w. of Valenciennes. Its situation, in the centre of an extensive coal-field, and in the immediate vicinity of iron mines, gives it unusual facilities for smelting iron, and its works of this kind are of considerable importance. D. is a regular and well-built town, and has a good market. It has some manufactures of beet-root sugar. Here the allies under Lord Albemarle were defeated by the French under Maréchal de Villars, 1712, July 24. Pop. (1881) 16,006.

DENARIUS, n. *dē-nā'rĭ-ŭs* [L. *denārĭŭs*—from *dēni*, ten, because originally equally to 10 asses]: principal silver coin among the anc. Romans, which after the reduction of the



Denarius of the earliest kind:
Having on the obverse a personification of *Rome* as a warrior with helmet; and on the reverse, a chariot drawn by four horses.

as equalled 16 asses. It was the penny of the authorized version of the New Test. It was first coined B.C. 269. Its weight at the end of the Roman commonwealth is estimated at 60 grains, while under the empire the weight was 52·5 grains of silver. The value of the commonwealth denarius was thus rather more than 8½*d.*, equalling abt. 17 cents; and of the later period (in use at the time of Christ) abt. 7¾*d.;* equalling a little more than 15 cents. **DENARY**, a. *dĕn'ėr-ĭ*, containing ten: N. the number ten. **DENARY SCALE**: see **NOTATION**.

DENATIONALIZE, v. *dē-năsh'ŭn-ăl-īz'* [L. *de*, and *nationalize*]: to deprive of national character or rights. **DENA'TIONALI'ZING**, imp. **DENA'TIONALIZED**, pp. *-īzd.*

DENAY, v. *dĕ-nā'* [L. *de*, and *nay*]: in *OE.*, to say nay to anything; to deny: N. denial. **DENAY'ING**, imp. **DENAYED**, pp. *dĕ-nād'*.

DENBIGH, *dĕn'bē:* parliamentary and municipal borough the county town of Denbighshire, n. Wales, in the n. of the county, 30 m. w. of Chester, 213 m. n.w. of London. It stands in the hundred of Isaled, near the middle of the vale of the Clwyd, on the sides and at the bottom of a rugged steep limestone hill, crowned by the imposing ruins of a castle built 1284 by Henry Lacy, Earl of Lincoln, where there had stood fortifications erected by William the Conqueror, and where there are traces of still earlier castellated remains. The newer part of D. was built at the bottom of the hill, after the destruction and desertion of a great part of the town on the top of the hill, about 1550. D. has manufactures of shoes, and leather for the English markets and export trade; but it is more a place of pleasant retired residence than commerce. In 1645, Charles I. took refuge in the castle after the battle of Rowton Heath. The garrison surrendered to the parliamentary forces, after a siege of two months, and the castle was soon afterward dismantled. The fortifications have an area of a sq. mile in extent. A lunatic asylum for the five counties of n. Wales was erected near the town 1848. A noble institution for the maintenance and education of 50 female inmates, of whom 25 are orphans, was built in the town, and opened 1860, with funds in the hands of the Drapers' Company of London, from money left to them 1540 by Thomas Howell, a Welshman. It has an endowment of about £1,500 a year. The charter of Henry De Lacy is preserved among the corporate archives. Pop. of. D. (1871) 6,323; (1881) 6,491.

DENBIGHSHIRE, *dĕn'bē-shėr:* county of n. Wales, on the Irish Sea, and between the Dee and the Conway. It is 41 m. long, with an average breadth of 17 m.; 603 sq. m.; has 8 miles of coast, and is the sixth in size of the Welsh counties. The surface is partly rugged and mountainous, with some beautiful and fertile vales, as the vale of the Clwyd, 20 miles by 7. In the north is a horseshoe range of hills, 65 m. long, convex to the coast. The highest hill is Cader Fromwen, 2,563 ft.; and many others rise above 1,500 ft. The rocks are chiefly Silurian clay and graywacke slates, with some granite and trap, and bands of Devonian, Carboniferous, and Permian strata. There occur coal, iron, slates, flags, millstones, lime-stone, lead, and copper. The chief rivers are the Dee, Conway, Elwy, and Clwyd. The Rhaiadr waterfall is 200 ft. high in two parts. Llangollen vale is famed for romantic beauty and verdure, amid hills of savage grandeur. The climate is mild in the lower parts, but cold and bleak among the hills, where small hardy sheep and ponies are reared. About two-thirds of D. are under cultivation; its corn, cheese, butter, and live-stock are greatly esteemed. It is well timbered. Salmon are caught in the rivers. D. is divided into 6 hundreds, 3 poor-law unions, and 64 parishes, in the diocese of Bangor and St. Asaph. The chief towns are Denbigh, Wrexham, Ruthin, Holt, Llangollen, Llanrwst, Abergele, and Ruabon. D. returns three members to parliament, two for the county, and one for Denbigh. D. was anciently occupied by the Ordovices, a powerful tribe, not entirely subdued by the Romans till the time of Agricola. Of British or pre-Roman remains there still exist tumuli, two cistvaens or stone cells, barrows, and forts. To the times of the Welsh and Saxon struggles are referable the Pillar of Eliseg, near Llangollen, and the dikes of Offa and Watt. Offa's, the king of Mercia's dike, to keep out the Welsh, was a ditch with small forts on mounds at intervals, from Herefordshire to the estuary of the Dee; Watt's dike was e. of Offa's dike, and parallel to it. Wrexham Church is one of the seven wonders of Wales. Chirk Castle is a fine Norman stronghold, lately restored.—Pop. (1871) 105,102; (1881) 108,931.

DENDERAH, *dĕn'dėr-â* [Gr. *Tentyra*, Coptic *Tentore*, probably from *Téi-n-Athor*, the abode of Athor]: ruined town of Upper Egypt, near the left bank of the Nile; lat. 26° 13′ n., long. 32° 40′ e. It is famed for its temple, dating from the period of Cleopatra and the earlier Roman emperors, one of the finest and best preserved structures of the kind in Egypt. The principal temple measures 220 ft. in length by about 50 in breadth, and has a noble portico supported on 24 columns. The walls, columns, etc., are covered with figures and hieroglyphics. Prominent among the former is that of Athor or Aphrodite, to whom the temple was dedicated. On the ceiling of the portico are numerous mythological figures arranged in zodiacal fashion, long regarded as a representation of the zodiac; but the absence of the crab has led some recent archeological travellers to doubt whether the figures were intended to have any reference to astronomy. There are many other sacred buildings at D., including a temple of Isis. All, with the exception of one propylon, are surrounded by a sun-dried brick-wall, 1,000 ft. long on one side, and in some parts 35 ft. high.

DENDERMONDE, *dĕn-dėr-mōn'dė* [Fr. *Termonde*]: town of Belgium, province of e. Flanders, at the confluence of the Dender and the Scheldt, 18 m. e. of Ghent. D., which is said to have originated in the 8th c., is fortified, and has a citadel dating from 1584, and possessing the means of laying the surrounding country under water in case of attack. Louis XIV. besieged it in vain 1667, but Marlborough, aided by a long drought, succeeded in taking it 1706. In connection with Marlborough's siege, D. is mentioned frequently in Sterne's *Tristram Shandy*. The principal buildings of D. are the town-house and several churches, most noteworthy of which is the church of Notre Dame, a very old edifice, containing two admired pictures of Vandyk. The manufactures are woolens, lace, cotton-yarn, etc., and there is a large weekly market for the disposal of the agricultural produce of the neighborhood. Pop. (1880) about 8,500.

DENDRASPIDÆ, n. plu. *dĕn-drăs′pĭ-dē* [Gr. *dendron*, a tree; *aspis*, an asp]: family of snakes, natives of s. Africa. The fangs are very long, poisonous, and erect. *Dendraspis angusticeps*, the narrow-headed dendraspis, is of an olive-brown color, tinged with green; it is about six feet long, has a thin long body, and is a good climber.

DENDRERPETON, *dĕn-drėr′pĕ-ton:* small lizard-like batrachian, found by Lyell and Dawson in the interior of the hollow trunk of an upright *sigillaria* in Nova Scotia. The tree was about two ft. in diameter, and consisted of an external cylinder of coal, and an internal axis of mud and sand, cemented together with fragments of wood into a solid rocky mass. In this were discovered the shell of a *pupa*, the first air-breathing mollusk met with in the coal, and the bones of a small reptile probably 2½ ft. long. It was described and figured by Owen as *D. Acadianum*. He showed it to be nearly related to *Archegosaurus*, from the plicated structure of the teeth, the sculpturing of the broad cranial plates, and the structure and proportion of certain limb-bones. It received its name, 'tree-lizard,' from its having been found in a tree; and this was supposed to show that it had arboreal habits; it is, however, probable that the remains had been washed in with the mud and sand which form the matrix in which they are preserved.

DENDRIFORM, a. *dĕn′drĭ-fawrm* [Gr. *dendron*, a tree; L. *forma*, shape]: in structure resembling a tree or shrub. DENDRIT′IC, a. *-drĭt′ĭk*, or DENDRIT′ICAL, a. *-ĭ-kăl*, resembling a tree or shrub. DEN′DRACHATE, n. *-dră-kāt* [Gr. *achātēs*, an agate]: an agate exhibiting in its sections the forms or figures of vegetable growths. DENDRER′PETON, n. *-drėr′pĕ-tŏn* [Gr. *erpĕton*, a reptile]: a small lizard-like fossil animal of the coal-measures, found in the interior of a fossil trunk of a tree. DEN′DRODONTS, n. plu. *-drō dŏnts* [Gr. *odous*, or *odonta*, a tooth]: a fossil family of fishes whose teeth, when cut, present numerous fissures spreading like the branches of a tree. DEN′DROID, a. *-droyd* [Gr. *eidos*, form]: resembling a tree or shrub. DEN′DROLITE, n. *-drō-līt* [Gr. *lithos*, a stone]: in *geol.*, a general term for any fossil stem, branch, or other fragment of a tree. DENDROL′OGY, n. *drŏl′ŏ-jĭ* [Gr. *logos*, a discourse]: that part of systematic botany which treats of the natural history of trees and shrubs. DENDROL′OGIST, n. one who. DEN-

DROM'ETER, n. *-drŏm'ĕ-tėr* [Gr. *metron*, a measure]: an instrument for measuring trees without climbing them.

DENDRITE, *dĕn'drīt:* peculiar branching mineral crystallization on the surfaces of the fissures and joints, or in the substance, of rocks, having the appearance of moss, and often mistaken for fossil plants. The hydrous oxide of manganese is the mineral that generally assumes this form occurring frequently in great abundance in limestone, steatite, trachyte, and other substances.

DENDROBIDÆ, n. plu. *dĕn-drŏ'bĭ-dē* [Gr. *dendron*, a tree; *bios*, life]: family of orchids, of the tribe *Malaxeæ*. **DENDRO'BIUM**, n. *-ŭm*, genus of orchids, typical of the family *Dendrobidæ*.

DENDROBIUM, *dĕn-drō'bi-ŭm:* genus of epiphytic plants with over 200 distinct species, common to all the tropical parts of Asia and Australia. It attaches itself to the bark of trees and the rough surface of rocks, and spreads rapidly in wavy festoons. The flowers are purple, yellow, and green in color, very fragrant, and of curious forms.

DENDROCŒLA, n. *dĕn-dro-sēl'a* [Gr. *dendron*, a tree; *koilos*, hollow]: section of *Scolecida*, belonging to the sub-ord. *Planarida*. They have the intestines branched or arborescent, and the body flat or broad.

DENDROCOLAPTES, n. *dĕn-dro-ko-lăp'tēz* [Gr. *dendron*, a tree; *kolaptō*, I peck]: the hook-billed creepers, a genus of birds belonging to the sub-family *Dendrocolaptinæ* and family *Certhidæ*, or Creepers. **DENDROCOLAPTI'NÆ**, n. *-tī'nē*, sub-family of birds belonging to the family *Certhidæ*, or Creepers; natives of S. America.

DENDROCYGNA, n. *dĕn-dro-sĭg'na* [Gr. *dendron*, a tree; L. *cygnus*, a swan]: the tree ducks, a genus of aquatic birds belonging to the family *Anatidæ*. The toes are long and project beyond the membrane, enabling them to perch on trees, whence the name.

DENDROLITES, *dĕn'dro-līts:* petrified stems or branches of trees or shrubs, which occur in all parts of the world in the formations called Secondary, especially in the Coal formation. They may be regarded as the remains of a former creation. They are of very various magnitude. In some places, gigantic stems are found, often observed to have branches, fruit, and even leaves—these, however, only as impressions—while in other places only fragments occur, which, however, belong to trees having nothing in common with those now growing in the same regions—as, for example, beautiful stems of palms at Chemnitz in Saxony, etc. Such woods are generally changed into agate, or into pitchstone, when they occur in ancient strata altered by volcanic fire. Concerning the question of their origin, opinions are divided. Many of them are so hard and beautifully colored, that they are cut and employed for all artistic purposes. When cut into very thin plates, they exhibit under the microscope the structure of the wood so perfectly, that it is possible for botanists to determine not only the natural order or family of plants to which it belongs, but even the genus and species. They belong mostly to the *Filices*, *Cycadeæ*, and *Coniferæ*. Brongniart was among the first investigators of this department of science; later, Unger and Göppert were especially distinguished.

DENDROMUS, n. *dĕn'dro-mŭs*, or DEN'DROMYS, *-mĭs* [Gr. *dendron*, a tree; *mus*, a mouse]: genus of rodent quadrupeds, belonging to the mouse family, and consisting of a single species, *D. typus*, an animal about three inches and a-half long, with a tail four and a-half inches. It frequents the branches of trees, where it forms its nest, and brings forth its young. It is a native of s. Africa.

DENDROPHIS, *dĕn-dro-fís* [Gr., tree-snake]: genus of serpents of the family *Colubridæ*, remarkable for their extremely slender form, their beautiful colors, and the liveliness of their movements. Their eyes are very large and prominent. They are widely distributed over the warm parts of the world; none are found in Europe. They live chiefly among the branches of trees, and insects are their principal food.

DENDROPLEX, n. *dĕn'dro-plĕks* [Gr. *dendron*, a tree; *plēxis*, a stroke, a blow]: genus of birds belonging to the *Certhidæ*, or Creeper family.

DENDROSOMA, n. *dĕn-dro-sō'ma* [Gr. *dendron*, a tree; *sōma*, a body]: genus of rhizopoda, belonging to the family *Acinetina;* body conical, thick, soft, and smooth.

DENDROSTRÆA, n. *dĕn-drŏs-trē'a* [Gr. *dendron*, a tree; *ostreon*, an oyster]: genus of mollusks belonging to the oyster family.

DENDRYPHIUM, n. *dĕn-drĭf'ĭ-ŭm* [Gr. *dendron*, a tree; *phuē*, growth]: genus of hyphomycetous fungi, consisting of molds growing on dead herbaceous plants.

DE NEUVILLE, *dĕh nĕh-vēl'*, ALPHONSE MARIE: 1836, May 31—1885, May 19; b. Saint Omer, France: painter. His father desired him to enter the naval service, but his heart was set on painting, and he was allowed to study with Picot. He was greatly encouraged by Delacroix, exhibited his first work and received a 3d class medal 1859, took the 2d class at the Salon 1861, served in the Franco-Prussian war, received the decoration of the Legion of Honor 1873, was on the Salon exhibition committee 1881, and became a member of the French Water-color Soc. 1883. He furnished a great number of designs on wood for Guizot's *History of France* and various illustrated publications; but was most noted for his great military and battle paintings.

DENHAM, *dĕn'am*, Sir JOHN: English poet: 1615–68; b. Dublin: son of the chief baron of exchequer in Ireland. In 1631, he entered Trinity College, Cambridge, where, after three years, he took his degree. Turning his attention to literature, he wrote a tragedy, *Sophy*, which in 1641 was acted with great applause at Blackfriars. Two years later he produced the poem *Cooper's Hill*, his most memorable work. In 1647, he was engaged in secret services for Charles I.; but these being discovered, he was obliged to escape to France 1648, returning to England 1652. After the Restoration, he was appointed surveyor-gen. of his majesty's buildings and created knight of the Bath. Toward the close of his life, the latter part of which was darkened by an unfortunate marriage, he was insane; but recovering for a short time, he commemorated the death of Cowley in one of his happiest poetical performances. His verse is characterized by considerable smoothness and ingenuity of rhythm, with here and there a passage of some force.

DENEHOLES, n. plu. *dān'hōlz* [AS. *denn*, a cave; Eng. *hole*]: ancient artificial excavations, consisting of a round vertical shaft, from 2 ft. 6 in. to 3 ft. in diameter, ending below in a cavern in the chalk. The shafts were originally descended by means of foot-holes in the sides. The chambers in the oldest, simplest, and shallowest are usually mere expansions of a beehive shape; in the deeper pits the cavern may consist of a series of chambers, symmetrically ranged around the shaft, or the walls of the chambers may have disappeared, and the roof be supported by pillars of chalk. Of three recently descended by the Essex Field Club at Hangman's Wood, near Gray's Essex, Eng., the greatest length was about 70 ft., breadth 46 ft., and height 18 ft., and they are all about 80 ft. deep. D. may be entirely in the chalk, or their shafts may be almost wholly in overlying beds. In England they abound most in Kent, n. of the North Downs, and in Essex, between Purfleet and East Tilbury. A very few of the older and simpler pits have been explored; they are found to date back to the stone ages. The deeper ones still need examination. They were probably storehouses and places of occasional refuge. On the ordnance maps the word is spelled *daneholes*, suggesting a closer connection with the Danes than seems to have been the case. See the paper by Mr. F. C. J. Spurrell, read at the Royal Archæol. Inst. 1881, April.

DENGUE, n. *dĕng'gā*, called also **BREAK-BONE FEVER**, also **DANDY**, and **BUCKET FEVER** [in the British West Indian Islands this disease was called *dandy*, in reference to the stiffness and restraint it gave to the limbs, afterward translated by the Spaniards into their *dengue*, meaning 'prudery, fastidiousness,' from its similarity of sound]: disease known in the southern portions of N. America and in the W. Indies, where it was first described as having appeared in 1827. It was very violent in its access, but not often fatal, and consisted chiefly of a severe attack of inflammatory fever, with great heat and redness of the surface, and well-marked rheumatic pains of the limbs both in the joints and muscles. It usually terminated by a copious perspiration after a few days.

DENIAL, n. *dĕ-nī'ăl* [see DENY]: a refusal; a saying *no*. **DENI'ABLE**, a. *-ă-bl*, that may be refused. **DENI'ABLY**, ad. *-blĭ*. **DENI'ER**, n. one who.

DENIER, n. *dĕ-nēr'* or *dĕn'ĭ-ā* [F.—from L. *denārĭŭs*, a

copper coin]: a French farthing, equivalent to half an English farthing; a small coin 1-12th of OF. *sou*.

DENINA, *dā-nē'nâ*, Carlo Giovanni Maria: 1731, Feb. 28—1813, Dec. 5; b. Revello, Piedmont: author. He studied at Turin, and in 1754 was appointed humanity prof. at Pignerolo, but lost his office through writing a comedy that excited the animosity of the priests. D. went to Milan, but was soon recalled to Piedmont, and appointed prof. of rhetoric in the Univ. of Turin. In 1777, he published anonymously at Florence his *Discorso sull' Impiego delle Persone,* in which he sought to show how monks might be transformed into useful members of society. This, of course, again cost him his chair, and he was even banished from the metropolis. In 1782, he went to Berlin, on the invitation of Frederick the Great. Here he lived many years, and wrote a number of works. In 1804, he was introduced to Napoleon at Mentz, to whom he dedicated his *Clef des Langues* (Ber. 1804), and was in consequence appointed imperial librarian at Paris, where he died.—D.'s principal productions are—*Discorso sopra le Vicende della Letteratura* (2 vols. Turin, 1761), *Delle Rivoluzioni d'Italia* (3 vols. Turin 1769–70), an excellent work, copiously abused by the apologists of ecclesiastical privileges; and *Storia Politica e Letteraria della Grecia Libera* (4 vols. Turin, 1781–2). D.'s other works were, for the most part, written in Prussia. Among them were—*Essai sur la Vie et le Regne de Frédéric II.* (Berlin 1788), *La Prusse Littéraire sous le Regne de Frédéric II.* (3 vols. Berlin 1790–1), *Tableau Historique, Statistique et Moral de la Haute Italie et des Alpes qui l' entourent* (Turin 1805), and *Storia dell' Italia Occidentale* (6 vols. Turin 1809–10).

DENIS, St., *săng dė-nē':* town of France, dept. of Seine, six m. n. of Paris. It is traversed by two small streams, the Croud and Rouillon, and is well built, with clean, spacious streets. It is within the line of forts forming the outworks of the fortifications of Paris, and was itself formerly fortified, but its ramparts have been converted into promenades. St. D. has manufactures of printed calicoes and other cotton goods; also several flour-mills, dye-works, bleacheries, and chemical works. Its yearly market, at which there is an annual sale of about 180,000 sheep, is one of the oldest in France, and lasts for a fortnight. The town is supposed by some to date from the foundation of a chapel raised above the tomb of St. Denis (q.v.). This chapel was replaced, some time after his death, by a church and abbey, built by Dagobert I., who was buried in the abbey church, which thereafter became the mausoleum of the kings of France. By a decree of the national convention 1793, the abbey was ordered to be destroyed, and in three days 51 tombs were sacrilegiously rifled and demolished, and the bodies cast indiscriminately into ditches prepared for them. The ancient treasures of precious things were brought in carts into the convention, and have never since been traced. The building, stripped of its lead to furnish bullets for the revolutionists, remained roofless, and was used as a cattle-market, until the time of the Empire, when Napoleon commenced its restoration, which was completed by succeeding governments, in a style surpassing even its former splendor. The crypt of the abbey church contains statues of the French kings and princes from Clovis to Louis XVI.—Pop. (1881) 43,127.

DENIS, *dė-nē'*, SAINT: according to tradition, the apostle of France and first bp. of Paris, suffered martyrdom in the 3d c. He was sent (as is said) from Rome about 250 to preach the gospel to the Gauls. After various detentions at Arles and other places, he arrived in Paris, where he made numerous proselytes. Pescennius or Sicinnius Lescennius, then Roman gov. of this part of Gaul, ordered D. to be brought before him, with other two Christians, Rusticus a priest, and Eleutheros a deacon. As they continued firm in their faith, in spite of threats, Pescennius caused them to be cruelly tortured, and afterward beheaded, 272, or, as others say, 290. Gregory of Tours, Fortunatus, and the Latin martyrologists, state that the bodies of the three martyrs were thrown into the Seine, but taken up by a pious woman named Catulla, and interred near where they lost their lives. At a later period, a chapel was built over their tomb. In 636, King Dagobert founded on the spot an abbey, called St. Denis, which soon grew to be one of the richest and most important in the kingdom, and was long the sepulchre of the French kings. What measure of truth there may be in the above biography, it is impossible to say. The Acts of St. D., written about the end of the 7th or beginning of the 8th c., founded upon vulgar traditions, is full of absurdities. The Greek Church makes St. D. to be the same person as Dionysius, the Areopagite, first bp. of Athens. The Rom. Cath. Church celebrates his memory Oct. 9. For a long period his name was the war-cry of the French soldiers, who charged or rallied to the *Montjoye St. Denis.*

DENISON, *dĕn-ĭ-son*, JOHN EVELYN, D.C.L.: for many years speaker of the house of commons and privy councilor: 1800–73; eldest son of John D., of Ossington, Nottinghamshire. He was educated at Christ Church, Oxford; married, 1827, Lady Charlotte, third daughter of the fourth duke of Portland; represented Newcastle-under-Lyne 1823–26, and Hastings 1826–30; was a lord of the admirality 1827–8; sat for Notts 1831—when he was also returned for Liverpool—till 1832, Dec. On the division of the county under the Reform Bill, he was returned for South Notts untill 1837. He was then without a seat until 1841, when he was returned for Malton, but exchanged this borough for North Notts 1857. In 1857, May, on the elevation of Mr. Shaw Lefevre to the peerage, D. was elected speaker of the house of commons without opposition, and unanimously re-elected 1859, '66, and '68. In 1872, he retired from the speaker's chair, in which he was succeeded by Mr. Brand, and shortly afterward was created Viscount Ossington. He was a D.C.L. of Oxford.

DENIZEN, n. *dĕn'ĭ-zĕn* [in olden times, one who received the privileges of a native by the king's charter, *ex* *donătĭōnĕ rēgis:* OF. *donaison*, a gift: OE. *deinzein*, a trader within, as opposed to *foreign*, a trader without, the privileges of the city: W. *dinasdyn*, a townsman—from *dinas*, a town; *dyn*, a man]: a citizen; one not a native, but made a citizen; a dweller; an inhabitant: V. to admit to residence and certain rights. DEN'IZENING, imp. DEN'IZENED, pp. *-zĕnd.* DEN'IZA'TION, n. *-zā'shŭn*, the act of making one a denizen. DEN'IZENSHIP, n. state of being a denizen.

DENIZLI, *dĕn-ĭz-lē':* town of Anatolia, Asiatic Turkey, on a low hill rising out of a spacious plain; lat. 37° 48' n., long. 29° 3' e. D. is occupied chiefly with bazaars and market-places, the inhabitants residing mostly in the environs. The manufacture of leather and a kind of morocco forms the staple industry of the place. Pop. 8,000 or 10,000; it was formerly much more numerous, but by an earthquake 1715, no less than 12,000 people perished.

DENMAN, *dĕn'man*, THOMAS, Baron: 1779, July 23—1854, Sep. 26; b. London: chief justice of England. He was educated privately and at Eton and St. John's College, Cambridge; took his degree 1800, was called to the bar 1806, and in a few years attained a rank inferior only to that of Brougham and Scarlett. His eloquent speech in defense of Queen Caroline brought on him the hatred of the king and retarded his promotion. In 1818, he was elected member of parliament as a whig and sat there till 1832, when he was elevated to the bench; 1830, was appointed atty.gen.; 1832, lord chief justice of the king's bench; 1834, raised to the peerage; and 1850, resigned the office of chief justice and retired from his profession.

DENMARK, *dĕn'mârk* (Dan. *Danmark*): smallest of the three Scandinavian kingdoms; between 54° and 57° 44' 50" n. lat. and 8° 5' and 12° 45' e. long., excepting the small island of Bornholm in the Baltic, about 90 m. e. of Seeland, in 15° e. long. Its cap. is Copenhagen. D. is bounded on the n. by the Skagerak, a gulf of the North Sea; on the e. by the Cattegat, the Sound, and the Baltic; on the s. by the states of the German empire; and on the w. by the North Sea, which the Danes call the 'Western Ocean.'

The following table gives the main divisions of the kingdom of D. and its principal colonies:

	Area in Eng. sq. m.	Population in 1880.
Denmark Proper, comprising the islands of Seeland, Fünen, Laaland, Falster, etc., and the peninsula of Jutland, ..	14,553	1,969,454
The Faröe Islands.....	495	11,221
Iceland	38,860	72,000
Greenland..............................	25,000	9,531
Danish W. I. Islands—viz., Santa Cruz, St. John, and St. Thomas, ..	105	37,600
	79,013	2,099,800

The population of D. proper (1870) 1,784,741. Copenhagen (Dan. *Kjœbenhavn*), the cap., had (1880), 235,234 inhabitants. In 1880, there were five towns in D., besides the capital, in which the population exceeded 10,000.

	Pop.
Aarhus, in Jutland	24,831
Odense, chief town of Fünen............	20,804
Aalborg, in Jutland................................	14,152
Randers, "	13,547
Horsens, "	12,652

The continental portion of D., which since the treaty of Vienna, 1864, Oct. 30, has been almost wholly limited to Jutland, is, in fact, the n.w. extremity of the German continent. The entire coast-line of D., along the North Sea, Skagerak, Cattegat, Sound, Baltic, and Little Belt, exceeds 800 m.; but many parts of the coast are entirely unavailable for maritime intercourse, in consequence of the shallowness of the water, or of the numberless sandbanks, bars, and small islands which skirt the coasts. Seeland, or *Sælland*, largest of the islands, and seat of the metropolis, Copenhagen, has about 2,000 sq. m. Its surface is in general very flat, only a few ft. above the level of the sea, and the highest of its few isolated elevations is not 500 ft. above the sea. The island is generally fertile and well-wooded, especially in the south, but in the north the soil is in many parts arid. Fünen (Dan. *Fyn*), the island next in extent, area about 900 sq. m., is divided from Seeland by the Great Belt, and from Jutland by the Little Belt. It is less wooded than Seeland, and is intersected by a range of hills of inconsiderable height. The smaller islands of Laaland, Langeland, Falster, and Moen, 2,000 sq. m., are grouped to the s. of Fünen and Seeland,

and have the same physical and geological characters. They evidently, at some earlier epoch of the world's history, formed, together with those two larger islands, one connected whole, with Jutland on the w. and Sweden on the e. The n.e. shores of Seeland are separated from the latter country by a channel 70 m. in length, and only 1½ m. in breadth at its narrowest point, known as the Sound, or the *Ore Sund,* Ear Sound, so denominated from its resemblance to the human ear. This channel varies from 10 to 19 fathoms in depth. The w. coasts of Seeland are divided from Fünen by the Great Belt, a channel 9 m. wide at its narrowest point, and from 5 to 25 fathoms in depth—while the w. shores of Fünen are separated from the peninsula of Slesvig and Jutland by the Litte Belt, about four-fifths of a m. wide. The peninsula of Jutland, about 9,600 sq. m., was anciently, and even comparatively recently, covered with forests; but since their wasteful destruction, extensive tracts have become converted into sandy heaths, and in some parts it has been found necessary to sow bent-grass and plant trees, to prevent the mischief accruing to the cultivated lands by the clouds of dust raised by the wind. One-third of Jutland has been rendered unfruitful by these causes, but where the few forests remain, the neighboring districts are productive and well cultivated. Efforts have been made within the last few years to plant the heaths and drain the marshes of Jutland, and the results have on the whole been successful, more especially in regard to the latter, which are of considerable importance, since they supply large quantities of turf for fuel.

The coasts of D., both on the continent and in the islands, are indented with numerous bays or *fjords,* the largest of which is Limfjord, which intersects Jutland, and since 1825 has insulated its n. extremity by breaking through the narrow isthmus which had separated it from the North Sea. It covers 250 sq. miles. D. abounds in small lakes, the most considerable of which are Arre, Esrom, Fure, and Bavelse, all in the n. and w. parts of Seeland. But as no inland point is more than 30 or 40 m. from the sea, and the ranges of hills are low and interrupted, the country has no rivers properly so called. Intercommunication is, moreover, facilitated in the islands and in Jutland by various canals.

Roads, Railways, etc.—The high-roads and lesser country roads are in general in excellent condition. In 1880, there were upward of 1,000 m. of railway in the kingdom (of which more than 900 m. belonged to the state), and the telegraphic lines extended to a length of 2,195 m.; and the number of telegrams transmitted was 1,125,124.

Climate, Soil, Productians, etc.—The climate of D. is modified by vicinity to the sea, and is considerably milder, and the air more humid, than in the more southern and continental Germany. The cold is seldom intense before Christmas, or after the middle of March. The summers are occasionally very hot; the weather generally may be characterized as very variable; rain and fogs are frequent. The mean temperature in Copenhagen, whose climate may be regarded as representing an average of that of all D., is, in winter, 32·9°; spring, 43·5°; summer, 63·5°; autumn, 49·3° Fahrenheit. The alternations from winter to summer are rapid, and scarcely broken by the intervention of spring or the succession of autumn. Westerly winds prevail in the proportion of 48 per cent. to all others. The total absence of mountains and large rivers, and the alluvial character of the soil, by precluding all mining operations, of necessity lead the peasantry to follow agriculture, in the pursuit of which more than half the population are engaged. The drought of the spring and the short and sudden heat of the summer are often detrimental to the grass; but there is seldom an absolute failure in the supplies, and the cereal crops are generally good. During the last half-century, the cultivation of wheat has increased nearly 200 per cent., while that of rye and barley has decreased.

Rye is more extensively used for bread than any other of the cereals, the average returns for the last 10 years showing that about 3,000,000 of tons were raised in the kingdom annually, valued at nearly 19,000,000 of rix-dollars; while, in spite of the relatively increased cultivation of wheat, the quantity and value of the latter scarcely reached the half of the above figures. Barley and oats, for which the Danish climate seems specially adapted, yield the largest annual average returns—viz., for the former, 6,500,000 of tons, valued at 29,000,000 of rix-dollars, and for the latter 7,500,000 of tons at 21,000,000 of rix-dollars. Since the potato crops were attacked by disease in 1847, the cultivation of this tuber had declined, but the average yield may be reckoned at about 400,000 tons. In 1876, there were in D. 352,262 horses, 1,348,321 horned cattle, 1,719,249 sheep, and 503,667 swine. Of these there were exported (1880) 14,539 horses, 99,831 horned cattle, 87,328 sheep, three-fourths of which belonged to Jutland, while the 251,459 swine, the largest number ever exported, had been nearly all raised in the islands.

The Danish fisheries are not so important as might be expected from the extended coast-line. But it was recently calculated that the Danish fisheries had an annual value of $750,000, and employed 6,500 men. The principal fish in D. are porpoises, herrings, whitings, cod, flounders, mackerel, salmon, and eels. Oyster beds, which are included under the royalties of the Danish crown, are at Frederikshavn, Skagen, and in the Limfjord. No part of the Danish territories is rich in minerals; some coal is found in the island of Bornholm, gypsum at Segeberg, and salt at Oldesloe. Amber is collected on the w. shores of Jutland. Peat is got wherever there are swamps; and from the absence of productive coal-mines, and the increasing scarcity of wood, it is of great value for fuel, and every village in the vicinity of such land has a certain portion assigned for its supply. Beech and birch are the prevalent trees, but oak, pine, and larch are also indigenous, and grow to perfection. Agriculture has been steadily improving in D. of late years, but the land is too much subdivided to admit of the expenditure of great capital; and, moreover, is seldom cultivated by the owners. Almost two-thirds of the entire area is arable land. The condition of the laboring classes is happy; they are more roomily and warmly lodged, and better clad, than in Great Britain, and their dwellings are always clean. The peasants continue to manufacture much of what they require within their own homes, the women weaving linen and woolen stuffs for the use of the household, and the men making their own furniture and simplest farm-implements, and the wooden shoes which are worn by men, women, and children. The Danes have not hitherto availed themselves of the great natural advantages of the country for manufactures and trade; and notwithstanding the rich porcelain clays in Bornholm, and the abundant water-power in every part of the kingdom, the industrial operations are inconsiderable. There are a few good porcelain and glass works, and iron foundries, chiefly in Seeland and near Copenhagen; and of late years the manufacture of cards and ornamental paper has been brought to great excellence in Copenhagen, and at Silkeborg, in Jutland. Linen is the principal article of domestic manufacture in Seeland, but the supply does not suffice for the home demand. Many of restrictions which formerly cramped foreign commerce have been removed, but the commercial legislation still hampers individual enterprise.

Exports and Imports.—The principal articles of export are grain, butter, cheese, smoked and salted meats, brandy, liqueurs, horned cattle, horses, skins, hides, tallow, bristles, etc. Among imports are sugar and molasses, wines and spirits, salt, drugs, spices, textile fabrics, timber, coal, coffee, tea, tobacco, rice, flax, hemp, iron and steel wares, etc.

About two-thirds of the export trade is carried on in native vessels. The total value of the imports 1874–80 ranges from $52,500,000 in 1878 to $63,250,000 in 1880; and of the exports in the same period from $42,500,000 in 1879 to about $55,000,000 in 1880. The bulk of the foreign trade is with Germany and Great Britain; the average annual value of the trade with Germany being about $20,000,000; that with Great Britain ranging from $10,000,000 in 1878 to $12,500,000 in 1880. In 1880, the Danish mercantile fleet consisted of 3,082 vessels, including 201 steam-ships, and 2,881 sailing-vessels; total tonnage, 249,466.

Revenue, etc.—The total revenue for the financial year 1880–1 was 51,745,463 kroner, or abt. $13,500.000, and the expenditure 47,543,367 kroner, or abt. $12,325,000. Since the war of 1866, the Danish government has maintained a large reserve fund for provision against war or other emergency. The amount reserved in 1882 was abt. $5,300,000. The interest of the fund thus accumulated constitutes a considerable item in the annual revenues of the state; and the national debt decreased from 1866 till 1880, when it was abt. $46,496,235. In 1882, however, it was abt. $55,168,000. Till lately, the current coinage consisted of gold Fredericks d'or (16s. 4d. = abt. $4), silver specie-dollars (4s. 3d. = abt. $1), rix-dollar or *rigs-daler* (2s. 2d. = abt. .50), divided into 6 marks of 16 skillings each. But by law 1875, Jan. 1, a decimal system of currency was introduced, the unit being the *krone*, divided into 100 öre. The krone is worth about 1s. 1⅓ d., abt. 25c. Since 1839, the Danish pound-weight has been made equal to half the French kilogramme, and its fractions reduced to corresponding equivalents. With a similar view of facilitating international commercial relations, the old Danish ship-measure of a læst (=150 cubic ft.) was discarded 1867, and the English tonnage system officially adopted. The present unit is the ship last, equal to 2 tons.

Army, Navy, etc.—According to law, all able-bodied adult Danes are liable to serve 8 years in the regular army, and a similar period in the army of reserve. Exemption from this duty can be obtained under definite conditions, and by payment of the appointed penalties. The kingdom is divided into 5 territorial brigades, subdivided into 4 battalions, each brigade furnishing its contingent of infantry and one regiment of cavalry. Exclusive of the reserve, the army on the peace-footing numbers 37,850 men and officers; and on the war-footing, 49,253. The budget for 1880–1 was charged 8,737,000 kroner (abt. $2,184,250) for the ministry of war. The Danish navy is recruited from certain maritime districts exempt from the liability of supplying men for the army. The old Danish fleet, of which D. was deprived by England in 1807, is now represented by a small but well-appointed force of 33 steamers (of which 8 are iron-clads), with a horse-power of 30,554. The navy numbered (1880) about 900 men and officers. The budget of 1880–1 was charged with the sum of 5,125,700 kroner (abt. $1,281,425) for the year's expense of the ministry of marine.

Education.—The educational institutions of D. have reached a high degree, and few countries, if any, can compete with her in excellence of system, and its extensive application relatively to the amount of the population. Education is compulsory for children between the ages of 7 and 14 years, and poor parents pay only a nominal sum toward the government or parochial schools, of which there are about 3,000 in Denmark. There are 6 training-colleges for the teachers of these public schools. Classical and other higher-class education is afforded by a large number of colleges in the capital and more important provincial towns, with the University of Copenhagen for its centre, whose professional and tutorial staff of about 50 university teachers is remarkable for the high order of instruction imparted. There are 3 public libraries in Copenhagen, of which the Royal Library, with 500,000 vols., is especially rich in Oriental and Icelandic MSS.

Religion.—The established religion of D. is Lutheran, to which the king must belong; but complete toleration is enjoyed in every part of the kingdom. The Reformation was introduced 1536, when Christian III. caused all the Roman Cath. bishops to be deposed in one day. D. is divided into 7 dioceses, or *stifter* (besides those in the West Indian colonies and Skalholt in Iceland)—viz., the metropolitan see of Roeskilde (the ancient capital) in Seeland, Laaland, Fünen, Ribe, Aarhus, Viborg, Aalborg; abt. 2,000 parishes, with numerous affiliated churches. The nomination of the bishops is vested in the king; they have no political character. There were in 1880 only 17,700 persons not belonging to the Lutheran Church, of whom a third were Jews, 3,000 Rom. Catholics, 1,400 Calvinists, 1,700 Mormons, 3,700 Baptists, 1,900 of smaller sects, the rest without creed or unknown.

Law.—The supreme court of justice, presided over by four assistant judges, chosen by the Landsthing, in addition to the four ordinary high judges, holds its sittings at Copenhagen, and there are lower courts in the towns. All civil cases are first brought before a court of conciliation, composed of persons from the vicinity, selected on account of their position and character. Their decisions are registered and have legal force where both parties have engaged to abide by the judgment; otherwise, the case is carried to the higher courts. Appeals are allowed from all lower courts to the supreme court.

Constitution and Government.—The succession to the crown was not necessarily hereditary till 1660, when the people and the clergy, impelled by hatred toward the nobles, in whose hands the supreme power of the state rested *de facto*, constituted themselves into a national assembly, which invested the sovereign (Frederick III.) for himself and his heirs with absolute power, and declared the succession to the throne hereditary. From that time, the crown exercised the *dominium absolutum*, unchecked by any constitutional restraint, till 1831, when Frederick VI., yielding to the pressure of the times, granted a constitution to his people, and established an assembly of notables for the islands and Jutland; the duchies being governed by their own constitutional forms. The nation was at first perfectly satisfied with the amount of power conceded by the king, but after a time the anomalous character of the authority vested in the assembly created great political agitation and discontent. This feeling continued to increase under the reign of Frederick's successor, Christian VIII.; and on the death of the latter, his son and successor, Frederick VII., saw himself obliged to depart from the conservative policy of his father, and to grant, 1849, the constitutional form of government which D. now possesses and which is based on most liberal principles. The national assembly or Rigsdag consists of the Folkething and Landsthing, and is invested with extensive powers; it meets annually for two months, and its members receive a fixed allowance during their sittings. The Landsthing is composed of 66 members, of whom 12 are chosen for life by the king, while the remainder are elected for a term of 8 years by certain municipal and rural electoral bodies, who represent the large taxpayers of the kingdom. A fixed age, good reputation, and a certain moderate independent income are the only qualifications required for election to this branch of the Rigsdag. The members of the Folkething, whose number (now 102) varies with the population, are elected for three years by universal suffrage, and, except that no fixed income is required in their case, they must have the same qualifications as candidates for the upper chamber. The Rigsdag must meet every year, and must, in the course of their session, consider and dispose of the annual accounts that the finance minister is bound to submit to their scrutiny.

The king's person is inviolable; the ministry is responsible, and with the king as president, constitutes the executive royal privy council. The seven members of this body, who preside over seven distinct ministerial departments, are individually and collectively responsible to the Rigsdag for their acts, and cannot under any circumstances be condemned or pardoned by the sovereign without the concurrence of that body. D. is divided for administrative purposes into 20 *Amter*, or jurisdictions—10 for the islands, and 10 for Jutland, each presided over by a chief or 'Amtmand,' who in Copenhagen alone bears the title of 'Over-president.' Primogeniture is still in force, but all other limitations to succession, and all remains of the ancient forms of land-tenure by soccage or fixed terms of labor, are being entirely abrogated. The titles of nobility in D. are limited to counts ('grever') and barons.

History.—The Kymri were the earliest-known inhabitants of Scandinavia, and made themselves formidable to the Romans 100 years before Christ. To them succeeded the the Goths, who, under their mythical leader, Odin, established their rule over the Scandinavian lands. Odin's son, Skjold, is reputed to have been the first ruler of D.; but the little that is known of Danish history in those remote ages, seems to indicate that the country was divided into many small territories, whose inhabitants lived by piracy. The people were divided into 'Bonder,' freemen, and 'Trælle,' bondsmen. The former busied themselves with war, and 'Vikingetog,' or piracy, and the government of the land; while to the latter were left the peaceful pursuits of hunting, fishing, and tilling the soil. The mission of Ansgarius, apostle of the north, to Southern Jutland 826, when he baptized Harald Klak, one of the Smaa Kongar, or little kings of D., was the means of first opening the Danish territories to the knowledge of more civilized nations. The country was soon torn by civil dissensions between the adherents of the ancient and modern faith. Gorm the Old, the first authentic king of D., the bitter enemy of Christianity, died 935, after having subjugated the several territories to his sway; and though his death gave fresh vigor to the diffusion of the new faith, paganism kept its ground for 200 years longer, and numbered among its adherents many of those half-mythical heroes whose deeds are celebrated in the Eddas and the Kæmpeviser of the middle ages. The success that attended the piratical incursions of the Northmen, drew them from their own homes; and while Gorm's descendants, Svend, and Knud, were reigning in England, D. was left a prey to anarchy. On the extinction of Knud's dynasty 1042, his sister's son, Svend Estridsen, ascended the throne. Internal dissensions and external wars weakened the country, and the introduction of a feudal system raised up a powerful nobility, and ground down the once free people to a condition of oppressed serfage. Valdemar I., by the help of his great minister Axel Hvide, known in history as Bishop Absalon, subjugated the Wends of Rügen and Pomerania, and forced them, 1168, to renounce the faith of their god, Svantevit, and accept Christianity. During the time of Knud VI., and in the early part of the reign of Valdemar II.—sons of Valdemar I.—the conquests of D. extended so far into German and Wendic lands, that the Baltic was little more than an inland Danish sea. The jealousy of the German princes and the treachery of his vassals combined to rob Valdemar II. of these brilliant family conquests. His death in 1241 was followed by a century of anarchy and inglorious decadence of the authority of the crown, during which the kingdom was brought to the brink of annihilation under the vicious rule of his sons and grandsons. Under his great-grandson, Valdemar III., the last of the Estridsen line, D. made a quick but transient recovery of the conquests of the older Valdemars, and the national laws were collected into a well-digested comprehensive code. From his death in 1375 till 1412, his daughter, the great Margaret, first as regent for her only and early lost son, Olaf, and later as sole monarch, ruled, not only D., but in course of time also Sweden and Norway, with such consummate tact, and with so light yet firm a hand, that for once in the course of their history, the three rival Scandinavian kingdoms were content to act in harmony. Margaret's successor, Erik, the son of her niece, for whose sake she had striven to give permanence, by the act known as the Union of Calmar, to the amalgamation of the three sovereignties into one, undid her glorious work with fatal rapidity, and, after an inglorious war of 25 years with his vassals the Count-Dukes of Slesvig-Holstein, he lost the allegiance and the crowns of his triple kingdom, and ended his disastrous existence in misery and obscurity. After the short reign of his nephew, Christopher of Bavaria, the Danes, on the death of the latter in 1448, again exerted their long-used ancient right of election to the throne, and chose for their king Christian of Oldenburg, a descendant of the old royal family through his maternal ancestress, Rikissa, great-granddaughter of Valdemar II. Christian I., father of the Oldenburg line which continued unbroken till the death of the last king of D., Frederick VII. 1863, laid the foundation of the Slesvig-Holstein troubles, which after maturing for centuries, have ended in our own day in dismembering the Danish monarchy. Christian bought the empty title of Count-duke of Slesvig and Holstein in 1460, by promising for his successors that they should forever leave the two provinces united, a pledge that he had no right to impose, and they no power to keep; and by his failure to pay his daughter's dowry to her husband, James III. of Scotland, he lost for Norway her ancient provinces of the Shetlands and Orkneys, which had been given in pawn to the Scottish king. His unprofitable reign was followed by half a century of international struggles in Scandinavia. The insane tyranny of the otherwise able and enlightened Christian II., by exasperating the Danish nobles, and lashing the national anger of the Swedes to fury, cost him his throne, and gave him a life-long cruel imprisonment among his subjects in D., who chose his uncle Frederick I. to be their king, while Sweden was forever separated from D., and raised under the Vasas (see GUSTAVUS I.) to be a powerful state. Christian III., in whose reign the Reformation was established, united the Slesvig-Holstein duchies in perpetuity to the crown in 1533. His partition of the greater part of these provinces among his brothers became a source of much mischief to D., which did not end till 1773, when the alienated territory was recovered by the cession of Oldenburg and Delmenhorst to the Grand-Duke of Russia, the representative of the Holstein-Gottorp family. Frederick II., who increased the embarrassments connected with the crown-appanages, by making additional partitions in favor of his brother (the founder of the Holstein-Sonderburg family), was succeeded by Christian IV., 1588, ablest of all the Danish rulers. His liberal and wise policy was, however, cramped in every direction by the arrogant nobles, to whose treasonable supineness D. owes the reverses which culminated in the loss of all the possessions hitherto retained in Sweden. The national disgraces and abasement, which followed, led in 1660, under Christian's son, Frederick III., to the rising of the people against the nobles, and their surrender of the supreme power into the hands of the king. For the next hundred years, the peasantry were kept in serfage, and the middle classes depressed; while the power of the crown rested in the hands of a Germanized nobility, who despised the language and usages of their country, and exerted the most baneful influence on the true national life. Many improvements were, however, effected in the mode of administering the laws, and the Danish kings, though autocrats, exercised a mild rule. The abolition of serfage was begun by Christian VII. 1767, but not completed till 20 years later; it was extended to the duchies 1804. The miseries of the reign of Christian's son, Frederick VI., due to the relations maintained by D. with Napoleon, brought the country to the verge of ruin. At war with Sweden, England, Russia, and Prussia, and with the finances in a depressed condition, the kingdom was threatened with bankruptcy; and though it had speedily rallied from the injuries and losses inflicted by the battle of Copenhagen, under Nelson 1801, the fresh rupture with the allies, which ended in the compulsory surrender to the English of the entire fleet, after the destructive bombardment of Copenhagen, 1807, Sep., completely paralyzed the nation. By the congress of Vienna, D. was compelled to cede Norway to Sweden. The discontent that had long been brooding in the duchies, degenerated after the stirring year of 1830 into mutual animosity between the Danish and German population, which was not allayed by the schemes devised by the court. The anticipated failure of heirs to the throne complicated the questions at issue; and the Holstein party, encouraged by the diet at Frankfort, and perhaps still more by Prussia, came to open rupture with D. 1848, hastened, no doubt by the reaction produced all over the continent by the French Revolution; and thus, on the accession of Frederick VII., half his subjects were in open rebellion against him After alternate hostilities and armistices, the Slesvig-Holstein war was virtually concluded 1849, by the victory of the Danes over the Slesvig-Holsteiners at Idsted, followed by the conclusion of peace between D and Prussia. The liberal constitution granted by the king fully satisfied his subjects in D. Proper, but disaffection still smouldered in the duchies.

On the death in 1863 of Frederick VII., the present king, Prince Christian of Slesvig-Holstein-Glücksborg, ascended the throne under the title of Christian IX., in conformity with the act known as the treaty of London of 1852, by which the succession to the Danish crown had been settled on him, and his descendants by his wife, Princess Louise of Hesse-Cassel, niece of King Christian VIII. of D. With Frederick VII., the direct Oldenburg line had expired, and at his death, the question of the succession to the duchies acquired an importance which it had never before possessed. A pretender, backed by German influence and help, at once started up in the person of the eldest son of the Duke of Augustenborg, whose defeat in 1848, and solemn renunciation of all claims on the titles or possessions of the Danish royal house, in consideration of his receiving a free pardon, and accepting a large sum of money from the crown, had been regarded in D. as the final settlement of his pretensions.

The cause of the Augustenborg prince, who assumed the title of Duke Frederick VIII. of Slesvig-Holstein, was speedily merged and lost sight of by Prussia and Austria in their direct aim of incorporating the duchies with the German Confederation. D., unaided by the neighbors and allies on whose support she had relied, was forced to go single-handed into the unequal contest. After a brave but utterly futile attempt at resistance, the Danes found themselves forced to submit to the terms conceded by their powerful foes, and to resign not only Lauenborg and Holstein, but the ancient crown-appanage of Slesvig into the hands of the German confederate powers. By the peace of Vienna, 1864, the Danish king bound himself to abide by the decision which Prussia and Austria should adopt in regard to the destiny of the severed Danish provinces. The dissensions between these two great powers, which led to the Austro-Prussian war of 1866, and resulted in the triumph of Prussia, have left the fate of the Slesvigers entirely in the hands of the latter state, which has hitherto refused to relinquish its hold upon the province. Since the war, D., though reduced to the narrow limits of the islands and Jutland, has recovered from its fall, and the degree of political and social freedom enjoyed by the nation is now perhaps as high as in any country in Europe.

DENNERY, or **D'ENNERY**, *děn-rē'* **ADOLPHE PHILIPPE**: **b. Paris, 1811, June 17; of Jewish extraction: dra-**

matic writer. His first employment was that of clerk to a notary; he gave that up to become a painter, afterward, while still very young, he became a contributor to the newspapers. The first dramatic work in which he had a hand was brought out 1831; this was *Emile, ou le Fils d'un Pair de France*, and it was produced by him in concert with M. Charles Desnoyer, a well-known *littérateur* and theatrical critic. It had some success, and soon his services as a play-writer came into considerable demand. He has been one of the most prolific of dramatic authors, having produced, by himself or in concert with others, about 200 pieces in one style or another; and a few years ago, five of his pieces were seen on the Parisian stage at one time. An attempt which he made, 1855, to establish a new theatre, did not succeed; but since that, he has been one of the founders, then the sec., and then managing director, of an important business company—the Société Thermale de Cabourg-Dives. D. was decorated with the Legion of Honor 1849, Dec. 10; and was promoted to the rank of officer 1859, Aug. 16.

DENNEWITZ, *dĕn'nĕ-vĭts:* small village in the province of Brandenburg, Prussia, 42 m. s.s.w. of Berlin. Here was fought, 1813, Sep. 6, a battle between 70,000 French, Saxons, and Poles, commanded by Marshal Ney, and 45,000 Prussians, under General Tauentzien. The fighting was obstinate to the last degree. Both armies more than once drove each other from their positions, but the patriotic enthusiasm of the Prussians finally prevailed, and Ney gave the order to retreat. At this moment Bernadotte, crown-prince of Sweden, appeared at the head of 70 battalions of Russians and Swedes, supported by 10,000 horse, and preceded by 150 pieces of cannon. These fresh troops turned the retreat into a complete rout, until the whole of the French army presented nothing but a vast mass of fugitives. The French lost 15,000 killed, wounded, and prisoners (the Germans say 20,000), and 43 pieces of cannon. The allies lost 6,000 killed and wounded, of whom 5,000 were Prussians. The most important feature of this victory to the Prussians was that most of their troops were *landwehr* (militia), for whom Napoleon had expressed the utmost contempt, designating them a 'rabble.'

DENNIS, *dĕn'ĭs,* JOHN: 1657–1734; b. London; son of a London saddler. He was put to school at Harrow; afterward, 1675, he went to Caius College, Cambridge. Four years later he removed to Trinity Hall in the same university, and in 1683, took his degree M.A. After leaving Cambridge, he travelled on the continent, passing through France and Italy. Returning home, he joined the Whigs, and brought a rancorous pen to the assistance of his party. He formed the acquaintance of Dryden and Wycherley, and other wits of the time, and made various attempts as a theatrical writer. D. was expensive in his habits; and in his later years he had to depend for subsistence on private patronage and on his pen. For some years he had a small annuity, but that he outlived. D. had an ungovernable temper, and made many enemies; and his name is one of the best abused in English literature: Swift lampooned him: Pope assailed him in the *Essay on Criticism*, and finally 'damned him to everlasting fame' in the *Dunciad*.

DENOMINATE, v. *dĕ-nŏm'ĭ-nāt* [L. *denomĭnātus*, designated—from *de*, *nomĭno*, I name: It. *denominare;* F. *dénommer;* Sp. *denominar*, to denominate]: to give a name to; to designate. **Denom'inating**, imp. **Denom'inated**, pp. **Denom'inator**, n. *-nā-tėr*, in a *vulgar fraction*, the number placed below the line, denoting the number of parts into which a *unit* or *whole* is supposed to be divided. **Denom'ina'tion**, n. *-nā'shŭn* [F.—L.]: a name or appellation; a title; a society or class of individuals called by the same name; a sect. **Denom'ina'tional**, a. *-ĭ-nā'shŭn-ăl*, pertaining to a number of individuals called by the same name; sectarian. **Denom'ina'tionally**, ad. *-lĭ*. **Denom'inative**, a. *-nā-tĭv*, that which gives or confers a name.—Syn. of 'denomination': name; designation; epithet; category; class; collection; sect.

DENON, *dė-nōng'*, Dominique Vivant, Baron: 1747, Jan. 4—1825, Apr. 27; b. Châlons-ser-Saône. He studied law at Paris, but quickly betook himself to the fine arts, and acquired reputation as an amateur and art critic. During a residence in s. Italy, he studied etching and mezzotint engraving, and with the Abbé St. Non, wrote a *Voyage Pittoresque de Naples et de Sicile* (Par. 1788). Afterward, he lived at Venice, and other Italian cities, but returned to France during the Revolution. Having at the house of Madame Beauharnais, formed the acquaintance of Bonaparte, he was chosen by him to accompany the expedition to Egypt in the capacity of a *savant*. He was indefatigable in drawing the relics of ancient Egyptian art. In 1802, he published his *Voyage dans la Basse et la Haute Egypte*, the engravings attached to which admirable work are very correct, and prove D. to have been a skilful artist. As a member of the Egyptian Institute, he had also the most important part in the *Description de l'Egypte* drawn up by that learned body. Bonaparte made him inspector-general of museums. He accompanied the emperor in various subsequent expeditions, and suggested to him what art-treasures of the conquered cities would be most suitable for the Louvre. After 1815, he was dismissed from office. The remaining years of his life were occupied on a History of Art, to be illustrated by the best artists, but he did not live to finish it. The work was completed by Amaury Duval, and published 1829, under the title *Monuments des Arts du Dessin chez les Peuples tant Anciens que Modernes*. D. executed as many as 300 etchings, chiefly imitations of the style of Rembrandt.

DENOTE, v. *dĕ-nōt'* [F. *dénoter*—from L. *denotārĕ*, to point out—from *de*, *nota*, a mark: It. *denotare*]: to point out by a mark; to indicate; to signify by some visible token. **Deno'ting**, imp. **Deno'ted**, pp. **Deno'tative**, a. *-nō'tă-tĭv*, having power to denote. **Deno'table**, a. *-tă-bl*, capable of being denoted. **Denotation**, n. *dē'nō-tā'shŭn*

[F.—L.]: the act of denoting; the marking off or separation of anything. DENOTEMENT, n. *dĕ-nōt'mĕnt*, in *OE.*, indications; signs.—SYN. of 'denote': to signify; mean; mark; indicate; point out; intend; express; imply.

DÉNOUEMENT, n. *dĕ-nô'mâng* [F. unravelling—from L. *de*, down; *nōdārĕ*, to tie in a knot—from L. *nōdus*, a knot —*lit.*, the untying or unravelling of the knot]: the winding-up of an affair; the final scene in a play, or in the plot of a novel; the development. Strictly speaking, D. designates the train of circumstances solving the plot, and hastening the catastrophe. A good D. in a novel or play should be natural, as a result of the preceding plot, yet not be so obvious as to be easily anticipated. Forced and arbitrary solutions of plot, offending against nature and common sense, are frequently perpetrated for theatrical effect (*coups de théâtre*).

DENOUNCE, v. *dĕ-nowns'* [F. *dénoncer*--from L. *denunciārĕ*, to intimate, to declare—from *de*, *nunciō*, I declare: It. *denunziare*]: to accuse in a threatening manner; to threaten solemnly; to inform against; to stigmatize; to accuse publicly. DENOUNC'ING, imp. DENOUNCED', pp. *-nownst'*. DENOUNCE'MENT, n. a public accusation; a threatening declaration. DENOUN'CER, n. *-sėr*, one who.

DE NOVO, phrase, *dē-nō'vō* [L.]: anew; afresh; from the beginning.

DENS, *dĕns* or *dŏng*, PETER: Roman Catholic theologian: 1690–1775, Feb. 15; b. Boom, a small Belgian town, on the river Rupel, about 10 m. s. of Antwerp. Apparently nothing is known—at least by Prot. writers—regarding the incidents of his life, as his name appears in none of the encyclopædias or current biographical works of reference, unless in some quite recent. The scanty information which we possess is derived from the epitaph on his tomb in the chapel of the archiepiscopal college of Malines, from the hand of a recent rector. From this it appears that he was reader in theology at Malines (something equivalent to prof. of divinity) for 12 years, *plebanus* or parish priest of St. Rumold's or Rumbold's Church in the same city, and president of the College of Malines for 40 years. He also held various honorary church offices. He was canon and penitentiary, synodical examiner, and scholastic archpriest of St. Rumold's—the metropolitan church of Belgium. The work which has rendered D.'s name familiar, even to the Prot. public, is his *Theologia Moralis et Dogmatica*. It is a systematic exposition and defense—in the form of a catechism —of every point of ethics and doctrine maintained in the Roman Church, and is extensively, if not generally, adopted as the text-book of theology in Rom. Cath. colleges, being a convenient and usable compilation. Its casuistical parts have been severely criticised by Protestant moralists. An edition was published at Dublin 1832.

DENSE, a. *dĕns* [F. *dense*—from L. *densus*, thick: It. *denso*]: close; compact; thick, as a fog; approaching to a solid. DENSE'LY, ad. *-li.* DENSE'NESS, n., or DENSITY, n. *dĕn'sĭ-tĭ*, closeness of parts; thickness. When of two bod ies of equal bulk or volume, one contains more matter than the other, it is said to have greater density. The quantity of matter is measured by the weight, and thus density and specific gravity come to be proportional to one another. Platina, which is about 21 times the weight of water, long passed for the densest, body; but Breithaup of Freiburg, 1833, showed *iridium* to be twice as dense. Rare is opposed to dense, and the rarest body known is *hydrogen,* about 14½ times rarer than atmospheric air. The density of bodies is diminished by heat, and increased by cold. See HEAT: MATTER.

DENSIMETER, n. *dĕn-sĭm'ĕ-tėr* [L. *densus*, thick; Gr. *metron*, a measure]: instrument contrived by Col. Mallet, of the French army, and M. Bianchi, for ascertaining the specific gravity of gunpowder.

DENT, n. *dĕnt* [really only another spelling of *dint*, a blow: F. *dent*, a tooth—from L. *dentem*, a tooth—*lit.*, a mark as with a tooth]: a gap or notch; a small hollow formed in a body or mass: V. to mark as with a tooth; to indent; to make a small hollow. DENT'ING, imp. DENT'ED, pp. *Note.*—It is only through a popular and false etymology that DENT has the present sense of 'a gap or notch' as with a tooth; the word is simply another spelling of *dint,* which see.

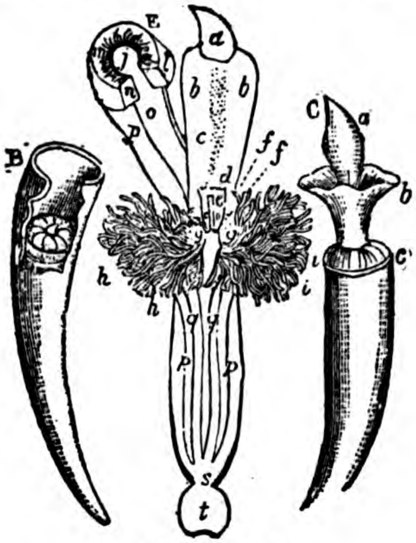
DENTA, *dĕn'tŏ*, or GYENTA, *dyĕn'tŏ:* market-town of Hungary, on the Berzava, about 30 m. s. of Temesvar. It has several large annual fairs. Pop. 3,000.

DENTAL, a. *dĕn'tăl* [F. *dent*, a tooth—from L. *dens* or *dentem*, a tooth: Skr. *dantas*, a tooth]: pertaining to the teeth; pronounced by the teeth: N. a letter pronounced chiefly by the teeth, as *d, t.*. DEN'TIST, n. *-tĭst* [F. *dentiste*]: one whose profession is to extract, repair, and supply teeth decayed or lost by disease. DEN'TISTRY, n. *-tĭs trĭ,* the profession of a dentist. DENTI'TION, n. *-tĭsh'ŭn* [F.—L.]: the cutting or breeding of teeth; a dental formula. DEN'TATE, a. *-tāt,* or DEN'TATED, a. [L. *dentātus*, toothed]: in *bot.*, toothed; having short triangular divisions of the margin. DEN'TATELY, ad. *-lĭ.* DENTA'TION, n. a toothed character. DEN'TICLE, n. *-tĭ-kl* [L. *denticŭlus*, a small tooth]: a small tooth or projecting point. DEN'TICULE, n. *-kūl,* the flat projecting part of a cornice on which dentils are cut. DENTIC'ULATE, a. *-tĭk'ū-lāt,* in *bot.*, finely toothed; having small tooth-like projections along the margin. DENTIC'ULATELY, ad. *-lĭ.* DENTIC'ULA'TION, n. *-lā'shŭn,* the state of being set with small teeth. DEN'TIFRICE, n. *-tĭ-frĭs* [F.—from L. *dentĭfrĭcĭŭm*, tooth-powder—from *dens*, a tooth; *frĭco*, I rub]: a powder used in cleaning the teeth. DENTIG'EROUS, a. *-tĭj'ėr-ŭs* [L. *gero*, I carry]: bearing, supporting, or supplied with teeth. DEN'TINE, n. *-tīn,* the tissue which forms the body of a tooth: a second application of the term is—the ivory-like part directly beneath the enamel—*R. Owen:* a third is—the enamel itself, which is very hard and durable and consists mainly of phosphate of lime with gelatine. DENTURE, n. *dĕnt'ūr* [F.]: an artificial tooth, block, or set of teeth. DENTILABIAL, a. *dĕn-tĭ-lā'bĭ-al*

[L. *labium*, a lip]: applied to a sound formed by bringing forward the tips of the teeth and laying them upon the lower lip, as in pronouncing *f* or *v*. DEN'TILS, n. plu. *-tĭlz*, in *arch.*, in the Ionic, Corinthian, or Composite orders, square projections in the bed-moldings of cornices, bearing some resemblance to teeth: see ENTABLATURE. DENTAL FORMULA, a notation generally used by zoologists to denote the number and kind of teeth of a mammiferous animal. For examples, see DENTITION. DENTAL SYSTEM: see TEETH.

DENTALIDÆ, n. plu. *dĕn-tăl'ĭ-dē* [L. *dens*, a tooth; suf. *-idæ*]: the tooth-shells, a family of mollusks, consisting of the single genus *Dentalium*.

DENTALIUM, *dĕn-tā'lĭ-ŭm* [Lat. *dens*, a tooth]: genus of marine gasteropodous mollusks, of the order *Tubulibranchiata*, having two symmetrical *branchiæ* (gills), which are inclosed, with all the other soft parts of the body, in an elongated shelly tube. The tube is conical, somewhat curved, and has considerable resemblance to an elephant's tusk in miniature. Until recently, from a mistake originating in the similarity of its branchiæ to those of some of the *Annelides*, the D. was ranked in that order. Fossil species abound in the Tertiary formations.



Dentalium:

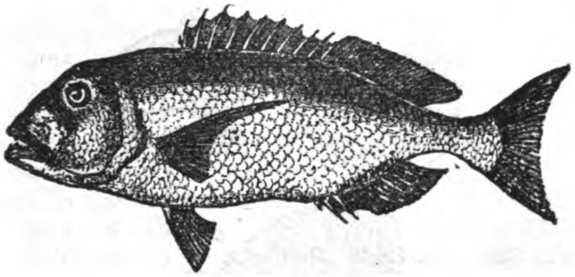
B, the shell of the Dentalium Entalis, broken longitudinally, showing the animal in a contracted state. C, the shell, showing the animal advancing out; *a* and *b*, the foot, the lobes of which are developed in the form of a corolla; *c*, a part of the collar of the mantle. E, the animal, magnified, extricated from the shell, with the mantle slit along the dorsal and medial line, detached in part from its posterior insertion, and turned aside to show the parts inclosed; *a*, the extremity of the foot, which closes the aperture, *j*, of the collar *lm*, of the mantle *nop*; *bb*, lobes of the foot; *c*, the foot itself, presenting a depression or a channel, running its whole length; *d*, the head; *e*, the cerebral ganglion; *f*, *f*, the two sides of the mouth; *g*, *g*, the membranes which support the branchiæ; *hh*, *ii*, the branchiæ; *pp*, *qq*, the retractor muscles; *s*, the muscle of insertion; *t*, the expanded posterior extremity, in which is situated the vent.

DENTARIA, *dĕn-tā'rĭ-a:* genus of plants of the nat ord. *Cruciferæ,* having a lanceolate compressed silique. *D. bulbifera,* an English species, has a simple stem, the lower leaves pinnate, the upper leaves simple, and rose-colored flowers, the axils of the leaves producing bulbs, and the creeping rhizome having tooth-like knobs, whence the name D., and the English name Coral-root. The root, dried, is said to have greater pungency than pellitory of Spain, and was formerly used in the same way for toothache. *D. diphylla,* a N. American species, is called Pepper-root from the same property.

DENTELLA, n. *dĕn-tĕl'la* [L. *denticulus,* dim. of *dens,* a tooth]: genus of plants belonging to the order *Cinchonaceæ.*

DENTELLE, n. *dĕn-tĕl'* [F.—from L. *denticulus,* a little tooth]: in *bookbinding,* an ornamental tooling resembling notching or lace.

DENTEX, *dĕn'tĕks:* genus of acanthopterous fishes of the family of *Sparidæ* (sea-breams, etc.), having a deep compressed body, and generally perch-like form; a single dorsal fin, the anterior rays of which are spinous; scaly cheeks; and many small conical teeth, among which are in each jaw at least four large canine teeth, elongated, and curved inward. One species (*D. vulgaris*), the *Dentex* of the anc. Romans, abounds in the Mediterranean, and has occasionally been taken on the s. shores of Britain. It is sometimes called the Four-toothed Sparus. It attains a large size, sometimes three ft. in length, and 20 to 30 pounds weight. It is excessively voracious, as its large canine teeth might indicate, devouring other fishes; but is itself in much request as an article of human food, and great numbers are taken in the mouths of rivers in Dalmatia and the Levant. It is there also a considerable article of commerce, being cut in pieces, and packed in barrels with vinegar and spices, in which state it will keep good for twelve months. It was preserved in the very same way by the ancients.

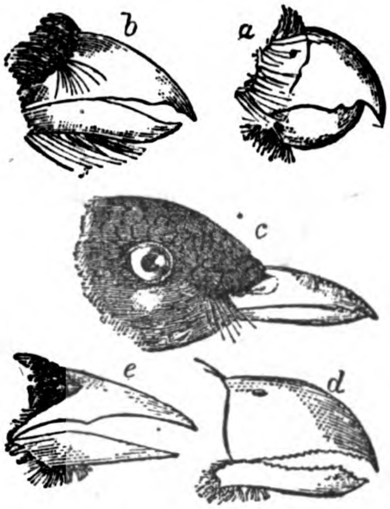


Dentex

DEN'TIFRICE: substance, generally powder, sometimes paste or liquid, used in cleaning the teeth. Charcoal and cuttle-fish bone-powder are useful as detergents; chalk, as a soft powder; and pumice, as a hard gritty substance for occasional use, when the teeth are more than ordinarily colored. Catechu, cinchona, and rhatany are used to give astringency to the tooth-powder; myrrh, to impart odor and to harden the gums; and bole armeniac, to communicate a red color. Common salt, cream of tartar, phosphate of soda, and sulphate of potash, are occasionally used; and where the breath has an unpleasant odor, the addition of 4 parts of bleaching-powder (chloride of lime) to the 100 of the tooth powder, removes the fetid character of the breath, and also tends to whiten the teeth. Fine qualities of soap are sometimes useful for cleansing teeth. Probably if any D. is used besides cold water frequently, and occasionally a little soap, the best is simple chalk specially prepared by removal of gritty particles, and by reduction to a fine smooth powder. The enamel of the teeth is liable to serious injury from many of the substances recommended for this use.

DENTIROSTRES, n. plu. *dĕn'tĭ-rŏs'trēz* [L. *dens*, or *dentem*, a tooth: *rostrum*, a beak]: the group of perching birds which have the upper mandible of the beak toothed in its lower margin, as the shrikes and fly-catchers.

DENTIROS'TRES: tribe or sub-order of birds, of the order *Insessores*, characterized by a bill with a marginal notch toward the extremity of the upper mandible. It is composed chiefly of insectivorous birds, though the Shrikes (*Laniadæ*), which belong to it, prey also on small birds, quadrupeds, and reptiles. Among the families of D. are *Merulidæ* (Thrushes, etc.), *Sylviadæ* (Warblers, etc.), *Ampelidæ* (Chatterers), and *Muscicapidæ* (Fly-catchers, etc).



Examples of Notched Bills.

The notches or serratures are evidently adapted to the better securing of the prey; and this conformation appears not only in the *Dentirostres*, but in birds of other groups and orders. Examples may be seen in the double-toothed Falcons, as in the genus Harpagus, *a;* in the Nogons, *b;* in the sub-genus Andropadus, *c;* and in the Chizærhis Variegata, *d*, where the teeth are small, sharp, regular, and of equal size. The *Lanio* of Vieillot, *e*, has a central or raptorial tooth to its bill.

DEN'TISTRY: art of the dentist, or of treating disease in the teeth (*Dental Surgery*), and of replacing these organs when lost (*Mechanical Dentistry*).

1. *Dental Surgery.*—The disorders to which the teeth are liable are those arising from defective development; such as imperfections in form or structure, irregularity of position, etc.; also those constituting diseases, properly so called, such as caries or dental decay, necrosis or death of a tooth, inflammation or neuralgia of the soft tissues connected with them, such as the gum, the central pulp or *nerve*, etc.; lastly, those arising from accidents of various kinds, such as blows, falls, and the like.

The treatment of all these different affections is generally *local*, i.e., confined to the spot in which the disease manifests itself. But dental diseases themselves are not always of a merely local nature; and it may be generally stated that wherever a tooth becomes diseased without any well-marked or ostensible cause, such a tooth has been originally defective or weak. It has been, in fact, imperfectly developed, and this imperfection is due to *constitutional* causes, or such as affect the general health of the individual. In this way, a very slight cause is sufficient to excite disease in, and lead to the destruction of, such a tooth. Disease impairs what little vitality it already possesses; it becomes less and less able to resist the action even of such influences as it is naturally exposed to in the mouth—chemical decomposition is set up, and the substance of the tooth is broken down, and decays—literally, rots away. This, in most cases, constitutes the pathology of dental caries; but there seems no doubt that in other instances caries, like any other morbid action in the bodily tissues, may commence in teeth previously quite healthy.

The object of the dentist, in these circumstances, is twofold: he either attempts to arrest the decay, and repair its ravages; or he removes the diseased tooth altogether. These operations, with supplying artificial teeth when the natural ones are lost, constitute, with those for the treatment of various minor affections, the main offices of dentistry.

Scaling.—This is a little operation, by which the accumulation of a substance termed 'tartar' is removed from the teeth. Tartar is a deposit from the saliva, and lodges in greatest quantity most commonly behind the lower front teeth. Where it accumulates it is generally accompanied by absorption of the gums, whereby the necks of the teeth are exposed, and they become loosened, and fall out. Its removal is effected by little hoe-shaped steel instruments, bent in a manner to reach more easily those situations in which the tartar is found. Their mode of use is by inserting the point of any one of them under the free edge of the mass of tartar, at the gum, and lifting it away from the backs of the teeth to which it is adherent. The teeth are then freed from any particles still sticking about them, and their surface smoothed by being rubbed with pumice powder or chalk.

Regulating.—The teeth of the second, or permanent or adult set, are very liable to be crowded and misplaced, one overlapping the other, or those of the upper jaw falling behind those of the lower when the mouth is closed, thus producing the prominent condition of the under jaw denominated 'under-hung.' To remedy these defects, a variety of means have been adopted by dentists; the principle upon which all of them act, however, being that of pressing the displaced tooth or teeth into the natural position. This, of course, requires that room or space should exist for them to be thus adjusted; and where this is not the case, the usual procedure is to remove one or more of the back teeth, or any others which it is less desirable to preserve. Some considerable time is necessary to complete the regulation of misplaced teeth; and even after they have assumed their proper position, they require to be carefully maintained there, otherwise a tendency to resume their former irregularity soon manifests itself.

Stopping or Filling.—This is one of the most important and delicate operations the dentist has to perform. The first step to be taken in filling or 'stuffing' a tooth, as it is sometimes called, is to clear away all decayed and decaying substance. For this purpose, a number of slender digging and excavating steel instruments, termed 'excavators,' are required With these, the hollow in the tooth is scooped out and thoroughly cleansed. If pain be occasioned by this process, the operation of 'destroying the nerve,' as it is called, had better at once be resorted to. This is performed in several ways. Where the tooth is single-fanged, as in front teeth, the nerve, or more correctly the pulp, may be removed by passing a slender broach, or square and pointed steel wire, up into the central cavity of the tooth, with a slight rotary motion. Where this cannot be done at once the best plan is to destroy the nerve by some caustic application, such as arsenious acid, chloride of zinc, carbolic acid, etc , carefully applied. The method of doing this is to clean the tooth thoroughly out, and then to apply a little of the caustic on a pellet of cotton wool about the size of a barley-pickle or a grain of rice—pressing it well into the decayed hollow, and then filling it over with soft bees-wax. This should be allowed to remain there six, eight, or twelve hours; it may then be taken out, and the stopping proceeded with.

The cavity being properly shaped and cleaned out until its walls are of sound and hard tooth-bone, it is to be well dried, and the plug of stopping-material inserted. Various substances are used for this purpose, and the mode of using each is somewhat different. For temporary stoppings, pure gutta-percha is a serviceable material. A quantity sufficient to fill the cavity, and somewhat more, is to be gently warmed over a spirit lamp—not in hot water—and when quite plastic, is to be firmly pressed with a blunt-pointed stopping-instrument or 'plugger,' into all the interstices of the hollow in the tooth—more and more being pressed in, until the surface of the plug so formed is on a level with the surface of the tooth, when all the superfluous portion should be removed, and the solid plug smoothly finished.

A set of stoppings known as osteo-plastic fillings have been brought into use; they are inserted into the tooth in a soft condition, where they harden in a few minutes.

Another variety of stopping-material consists of amalgams of different kinds. Many absurd statements have been made regarding the evil effects of amalgam stoppings, but the only real disadvantages attending their use are shrinkage, and that many of them get black in the mouth and discolor the tooth, while some that do not get black are friable, and crumble away in a short time. They are to be readily obtained, made up, and under various names. None of them seem much superior to what is known as the platinum and gold alloy amalgam. The amalgam, then, whatever one it may be, is to be rubbed up with mercury to a firm, plastic consistence, and carefully introduced into the dried cavity in the same way as described regarding the gutta-percha, and is to be finished off in precisely a similar manner.

Gold-stopping is an operation of much more complicated and difficult description. The materials used here are either gold-foil—that is, thick gold-leaf—or the peculiar substance, or rather the peculiar form in which gold exists, known as sponge-gold, or 'pellets' of gold made up in a soft spongy condition of various sizes ready for use. In stopping a tooth with gold, very great care is necessary in preparing the cavity. Its *shape* must now be particularly taken into account, and the nearer it approaches to a cylindrical form the better. The gold-foil, when it is employed, should be cut into strips, their breadth varying according to circumstances. Various modes of packing the gold are adopted according to two conditions in which gold exists—namely *adhesive*, where each portion can be welded to the other; or *non-adhesive*, where they are securely fixed merely by tightly wedging them together. Non-adhesive gold can be made adhesive by heating it to redness. In stopping with sponge, or other forms of gold, the preparatory steps are the same as for foil-stopping; it is, however, necessary to be more careful that no moisture interfere with the operation.

The surface of a gold plug, formed in either of these ways, should be well consolidated by hard pressure with a blunt plugger, or lightly hammered with a suitable mallet, and the superfluous portion being removed, it ought to be burnished until it assume a brilliant metallic lustre.

Extraction.—This is the principal surgical operation in dentistry. It is demanded usually in consequence of what is termed toothache—a disorder which is not always one and the same in its nature. This want of uniformity in the nature of those diseased states to which teeth are subject, and which are comprehensively denominated toothache, leads to the conflicting results of applications for its cure. These remedies are numerous, and of various characters. Their intention, in general, is either to destroy the nervous fibres existing in a tooth, or to narcotize and render them insensible. Among those acting in the former manner are such as creasote, arsenious acid, carbolic acid, pepsin, chloride of zinc, nitrate of silver, alum, tannin, etc.; among those acting in the latter mode are chloroform, laudanum, ether, spirit of camphor, etc. In all cases the decayed cavity should previously be well cleaned out, otherwise the remedy employed may be altogether prevented from reaching the spot where it is intended to act.

Where extraction has become necessary, it is performed by means of instruments adapted to the special peculiarities of the tooth requiring removal, or to the circumstances in which it exists. The great matter is, that each tooth should be extracted in accordance with its anatomical configuration; and to accomplish this, requires an intimate knowledge of the natural form proper to each of these organs individually; without this, it is impossible to extract any tooth upon a correct principle. The tooth is grasped, so far as the instrument can be made to do so, by that portion of the root or fang which just emerges from, or perhaps which is just within, the socket; it is then loosened, not exactly by pulling, but rather by moving it in a lateral or in a rotatory manner, in strict accordance with the respective character of fang possessed; and finally, on its being thus detached from its connection with the jaw, it is, with very little force in ordinary cases, easily lifted from its socket.

Anæsthetics are used during the extraction of teeth in the same manner as for other surgical operations, where it is desirable to abolish pain. Ether and chloroform are the only agents of this nature which have as yet been found generally fit for practical application in any operation of a prolonged character. Chloroform tends to depress the circulation when far pushed—becoming dangerous in a certain class of cases, and in this way should be watched with care during its administration. Ether has little of this tendency, but requires larger time to induce insensibility, is more exciting and persistent in its effects, while the odor of this preparation remains about the patient for hours. Both of these agents are liable to occasion sickness, and as a variety of accidental and collateral difficulties may arise during their exhibition, they ought not to be given by inexperienced hands.

An anæsthetic proposed at the end of the last century—namely, nitrous oxide or laughing-gas, has been revived, and its application in dental surgery has been of much service, answering all the purposes of chloroform or ether in short operations. Like these it requires careful employment, and in some cases it were better avoided if possible—such as in elderly patients of a full habit, or those who may have suffered from any lesion of the nerve centres, from hemoptysis, etc. Other modes of inducing insensibility, local or general, have been proposed from time to time, but one after another has been abandoned as unserviceable. All over the world quack nostrums are found for rendering this operation painless; but had any of them afforded the least chance of success, it would long ago have been gladly welcomed and generally adopted by dentists.

2. *Mechanical Dentistry*—including the manufacture of artificial teeth, and the needful appliances for them. The various conditions of the mouth requiring artificial teeth, range from cases where only one tooth may be wanting, to those where not a single tooth remains in the jaw, above or below. Accordingly, artificial teeth are spoken of as partial or complete sets—a partial set being one for either upper or lower jaw, where some of the natural teeth still remain; a complete set being one for either jaw, where none are left, or for both jaws, when both are in such circumstances.

The simplest form of partial sets is what is termed a pivoted tooth. This is an artificial tooth fixed in the mouth upon the fang or root of one whose crown has been lost by decay or otherwise. The mode of procedure is as follows: An artificial tooth, as near as possible to the color and form of that to be replaced is selected. This artificial tooth may be either the crown of a natural human tooth corresponding to that lost, or one made in imitation of this, in a species of pottery-ware, and by a long process. Such *mineral teeth*, as these last are termed, are manufactured on an extensive scale, and sold ready for use to dentists. A tooth of either kind, then, being selected, is accurately fitted to the root remaining in the mouth, and, by means of a gold pin, adjusted to, and inserted into the open central canal existing in the root—the other extremity of this gold pin being attached to the substitute tooth—the whole is fixed in its natural position, in a manner that renders detection almost impossible.

Where more than one tooth is required, and occasionally even where only one is necessary, a somewhat different contrivance is had recourse to. What is called a 'plate' requires to be fitted to the gum and remaining teeth in so precise and perfect a manner as to lie quite firmly and steadily in its place, and to it the artificial teeth required are subsequently fixed.

This 'plate' is frequently of gold, silver, or platinum plate, of the thickness of card-board, in which case, the name of 'plate' is used in its literal signification. But such plates may be made of other substances besides those of gold, silver, etc., such as vulcanized caoutchouc (q v.) or vulcanite, or a material recently introduced, and termed celluloid base—a compound of camphor and gun-cotton. The first step in any of these processes is to obtain an exact model of the gum and other parts upon which the plate is to rest. This is obtained by introducing bees-wax, or gutta-percha, or other modelling compound, softened by previous heating, into the patient's mouth, and pressing it forcibly upon those parts of which an impression is desired. On removing the wax or other substance from the mouth, Paris plaster is poured into the mould thus procured, and on its hardening, or 'setting,' this plaster-cast presents an exact counterpart of the gum. It is upon this plaster-model that all the subsequent operations are performed in fitting the artificial set.

Metallic-plate Sets.—Where the framework lying upon the gum is to be of gold or silver plate, or the like, it is necessary to procure, besides the plaster-model, a metal one. This metal-model is generally cast in zinc, gun-metal, or some such material; and a counter-model of a softer metal, generally lead, is taken from this again, so that a complete pair of dies is in this way procured. The gold or other plate, cut of a convenient size, is then stamped between the two metallic dies, and so made to assume the precise form desired. It is then trimmed, and any more delicate adjustments made upon it, such as soldering bands or clasps round those parts where it is to embrace any teeth remaining in the mouth; and it is completed by having the individual artificial teeth added to it, and adapted to the comfort and convenience of the wearer. The mode of fastening the teeth to the plate is in one of two ways. One kind of teeth have a tube extending along their whole length, and these are fastened by means of a pin fixed to the plate, upon which the tooth is secured by this pin passing up the tube alluded to. The other kind are provided with short platinum pins, fixed in the material of the tooth during its manufacture, to which pins a piece of gold or other plate is soldered, or a mass of gold fused upon them, and this, again, soldered to the framework of the set itself, wherever they are required.

Vulcanite Sets.—The first step in the manufacture of a vulcanite set of teeth is to make a pattern set in wax, with the mineral teeth (constructed for the purpose, and which are to be used in the piece when it is finished) fixed in the wax; the whole constituting, in short, an exact fac-simile of what the completed set is intended to be. This pattern set is made upon and fitted to the plaster model, and is adjusted to the wearer's mouth precisely as if it were the set to be worn there. When everything is thus prepared, a duplicate of the wax-set is made in vulcanite—the vulcanite replacing the wax, and the mineral teeth being retained as they were. The process by which the vulcanite is made to take the place of the wax consists in imbedding the pattern set in Paris plaster, so that the mould of it, thus secured, may be separable into at least two parts. On these being taken asunder, the wax of the pattern set is melted out with boiling water, leaving the teeth *in situ*. The wax is then replaced by raw vulcanite, which, on the mould being reclosed, is subjected to the usual process of vulcanizing.

For a more detailed account of dentistry, see the numerous illustrated special works, such as: Tomes's *Dental Surgery;* Smith's *Handbook of Dental Surgery;* Taft's *Operative Dentistry;* Richardson's *Mechanical Dentistry;* Hunter's *Dental Mechanics;* and Oakely Cole's *Dentistry.*

DENTI'TION, Period of: process of teething; the cutting or breeding of teeth. In man and most mammals, there are two distinct sets of teeth: one set which appears shortly after birth, and which are termed the *milk* or *deciduous* teeth; and a second set, which, after a few years, replaces these, and which are termed *permanent* teeth.

In the human subject, the milk-teeth are 20 in number, each jaw containing (from before backward) four incisors, two canines, and four molars; while the permanent teeth are 32 in number, each jaw containing four incisors, two canines, four premolars or bicuspids, and six molars. Anatomists are in the habit of briefly expressing the number of the different kinds of teeth in any mammal by what they term a *dental formula*. The permanent teeth in man are represented by the formula,

$$i\,\frac{2-2}{2-2},\ c\,\frac{1-1}{1-1},\ p\,\frac{2-2}{2-2},\ m\,\frac{3-3}{3-3}=32,$$

where the letters *i, c, p, m,* stand for incisors, canines, premolars, and molars, and where the two terms in each numerator and in each denominator represent the number of each particular kind of tooth in each half of the upper and lower jaw respectively. As these formulæ are of common use in most works on zoology and comparative anatomy, we add another example—that of the permanent teeth of the hog, whose formula is,

$$i\,\frac{3-3}{3-3},\ c\,\frac{1-1}{1-1},\ p\,\frac{4-4}{4-4},\ m\,\frac{3-3}{3-3}-44;$$

which signifies that there are on each side of both upper and lower jaws three incisors, one canine, four premolars, and three molars, making in all 44 teeth.

For a general description of the form and uses of these different kinds of teeth, see Digestion, Organs and Process of, where their special uses are noticed in reference to the digestive function; for the history of their structure, etc., see Teeth.

The following is the usual order and period of appearance of the milk-teeth: The four central incisors usually appear through the gums about the 7th month after birth, those of the lower jaw showing themselves first. The lateral incisors next appear between the 7th and 10th months; the anterior molars show themselves about the 13th month, and are soon followed by the canines, which usually appear between the 14th and 21st months. The posterior molars are the last and most uncertain in their time of protrusion, which may range from the 18th month to the end of the 3d year. Except in the case of the incisors, there is no definite law as to whether the upper or lower teeth first appear.

About the middle or end of the 7th year the jaw-bones have become sufficiently elongated to permit the appearance of the first true molar; and about the same time, the central incisors are replaced by the corresponding permanent teeth. The advance of the permanent teeth toward the surface of the gum causes the absorption of the roots of the temporary teeth, and thus facilitates their shedding; the crown falling off, and leaving room for the permanent tooth behind it to come forward and supply its place.

In the replacement of the first by the second set of teeth, the following order is observed: The middle incisors are first shed and renewed (usually when the child is about eight years of age), and then the lateral incisors (perhaps a year later). The anterior molars of the first set are then replaced by the anterior premolars (usually about the 11th year); and about a year afterward the posterior deciduous molars are replaced by the second premolars. The persistent canines take the place of the deciduous ones in the 12th year; these being the last of the milk teeth to be exchanged. The second molars appear between the ages of 12½ and 14 years; and the third molars, or *dentes sapientiæ* (wisdom teeth), seldom appear till 3 or 4 years subsequently, and often much later.

Mr. Saunders, an English dentist, has shown in his pamphlet, *The Teeth a Test of Age, considered with Reference to Factory Children*, that the teeth afford a far better test of age at this period of life, than the standard of height which has been adopted in British legislation. Children under the age of 9 years, are not to be employed in factories; and from 9 to 13 years, only part of the time. The teeth give good indications of these periods.

Dangers attending Teething.—The teeth are formed in closed sacs, and in rising to the surface in the progress of their growth they slowly penetrate the gum from below; a process familiarly called 'cutting the teeth.' For the minuter physiology of this process, see TEETH. The dangers to which children are exposed belong particularly to the period of the first dentition, or from five months old to two years or more. Infants are occasionally said to die of 'teething;' but this is one of those vague phrases that cloak ignorance; for the mere cutting of the teeth is never, by itself, mortal, or even a serious source of suffering. It becomes a cause of disease only by its reflected influence on the delicate nervous system of the child. The period of dentition, in fact, is one during which the whole organization of the infant is undergoing a revolution; in passing from an exclusively milk-diet to one of a more complex character, the entire digestive system undergoes a corresponding development. The diseases of this period of life correspond in importance with the great physiological changes taking place in it, and with the dangers of derangement in the just order or symmetry of their development. If these diseases often appear to be due directly to the cutting of a tooth, it is because complex causes of disorder have prepared the way for a morbid change, which is ready to be developed into activity by a comparatively slight irritation. The principal diseases of dentition are diarrhœa (q.v.), convulsions (q.v.), vomiting, and hydrocephalus, or tubercular inflammation of the membranes of the brain, which are all apt to originate at this period of infantile life, and to coincide more or less closely with the development of the first set of teeth. It is very doubtful how far the operation of cutting the gum with a lancet, so commonly supposed a specific for the diseases of dentition, ought to be encouraged. Sometimes there is evident irritation, or even inflammation of the gum, and then the operation will probably at least do no harm; but the indiscriminating use of the gum-lancet, at the request of anxious but foolish mothers and nurses, is characteristic of a weak and erroneous routine practice, and must be denounced as an unwarrantable interference with the truly beautiful process by which the tooth is gradually evolved from its socket, in most cases, without any suffering. For the special treatment of the diseases of dentition, see the titles of these diseases.

D'ENTRECASTEAUX, *dŏngt'r-kâs-tō':* cape or headland in w. Australia, forming nearly the s.w. point of the continent; lat. 34° 52' s., and long. 116 e. The name is one of the few traces of French discovery in that part of the world. It is applied also to an archipelago between New Guinea and New Ireland, about lat. 10° s. and long. 151° e.

D'ENTRECASTEAUX: channel, an arm of the Pacific, separating Bruné Island from the s e. coast of Tasmania or Van Diemen's Land. It is about lat. 43° 25' s., and long. 147° 15' e., is 35 m. long, and varies in width from 3 to 9 miles. On the side of the mainland, it is connected with the interior by means of the Derwent and the Huon, communicating through the former with Hobart-Town, the capital.

DENUDATÆ, n. plu. *dē-nū-dā'tē* [fem. plu. of L. *denudatus*, pp of *denudo*, I lay bare, I make naked]: an order in Linnæus's natural system. It contained the crocus and its allies.

DENUDE, v. *dĕ-nūd'* [F. *dénuder*—from L. *denūdārĕ*, to make naked—from *de*, *nūdus*, naked]: to make naked; to strip; to divest of all covering; to uncover. **DENU'DING**, imp. **DENU'DED**, pp. **DENUDATE**, a. *dĕn'ū-dāt*, in *bot.*, having a hairy surface deprived of hairs. **DENUDATION**, n. *dĕn'ū-dā'shŭn* [F.—L.]: the laying bare by removal; in *geol.*, removal of solid matter by water in motion, whether of rivers or of the waves and currents of the sea, and the consequent laying bare of some lower rock. The rate of abrasion depends on the velocity of the current, and the nature of the solid materials through which it flows; these two causes equally affect the deposition of the abraded matter, for the carrying power of the water varies with its velocity and with the weight of the particles. The heavier débris—large stones and gravel—are carried short distances, and deposited generally in masses; the finer particles are conveyed even by a slow current to great distances, and scattered in thin layers over extensive districts. All deposition, except in the case of showers of volcanic ashes, is the sign of a superficial waste going on contemporaneously, and to an equal extent, elsewhere, the gain at one point being equal to the loss at another. No new material has been used in the formation of the sedimentary rocks. The degradation and abrasion of igneous rocks provided the materials of the earliest strata; these in their turn were frequently abraded and re-deposited, under new conditions, and with the remains of a newer fauna and flora. Thus the crust of the globe has not actually increased in thickness, for whenever it acquires density in one place, it becomer thinner in another.

The changes that have been effected by denudation, and the amount of matter thus transported, are difficult to imagine. In districts where faults occur, the surface has been smoothed, and the uptilted ends have been washed away. These faults sometimes extend over several hundred sq. m., and the dislocations, had they remained unaltered, would have produced high mountains with precipitous escarpments. In regions with horizontal stratification, denudation has produced inequalities, hollowing out valleys of denudation, and often carrying away the whole of the superficial strata, leaving mountains here and there.

DENUNCIATION, n. *dĕ-nŭn'sĭ-ā'shŭn* or *-shĭ-ā'shŭn* [L. *denuntĭātĭōnem* (see DENOUNCE)]: a declaration of intended evil; a public menace. **DENUN'CIA'TOR**, n. *-shĭ-ā'tėr*, one who. **DENUN'CIATOR'Y**, a. *-ă-tėr'ĭ*, containing a denunciation.

DENVER, *dĕn'vėr:* city, cap. of Arapahoe co. and of the state of Colo.; lat. 39° 45′ n., long. 104° 59′ w.; on the South Platte river; 15 m. e. of the Rocky Mountains, 106 m. s. of Cheyenne, 639 m. w. of Kansas City, 922 m. w. of St. Louis; elevation 5,203 ft. above sea level. The climate is dry, healthful, invigorating, and beneficial to persons afflicted with consumption and other pulmonary complaints. The site of the city is level, and affords grand mountain scenery, including Long's, Pike's, and other snow-covered peaks. It seems incredible that the beauties and grandeur of a mountain can be clearly discerned at a distance of from 70 to 80 m.; but such is the case at D. owing to its extraordinary atmosphere. Long's Peak, 14,056 ft. high, is somewhat over 70 m. distant; Gray's, 14,251, is further s., but opposite the city on the w.; Pike's Peak, 14,216, is 76 m. distant. The summit of Pike's Peak is visible on a clear day from First View, a station on the Kansas Pacific railroad, a distance of 150 m.; and in crossing the Great Plains, after first coming in view of the mountains, they appear as if easily reached in a day's journey by wagon.

The first trapper's hut set up in Colo. occupied a site within the present limits of D. and was built in the autumn of 1857; and the first log and roofed cabin was put together 1858, Oct. The place was then named St. Charles, but was subsequently given its present name in honor of Gov. James W. Denver, of Kansas, to which all of Colo. at one time belonged. The first family located in D. 1858, Aug.; the first hotel was built 1859, Feb.; the first election was held 1859, Mar.; the first express coach arrived 1859, May; the first legislative body in the territory assembled in D. 1859, Nov., and granted a charter to D. City; and the first election and formal organization under the charter took place 1859, Dec. 19. Owing its existence to the discovery of gold at Pike's Peak, its location made it the gateway to the mines, gave it the bulk of all the travel, and led it to become known as the 'Queen City of the Plains.' In 1863, it was almost entirely destroyed by fire, and again, 1864, by flood. The first railroad connection between D. and the outer world was made 1868, when the D. Pacific was completed to Cheyenne, distant 106 m., and there united with the Union Pacific. Next was the Kansas Pacific, which brought D. and Kansas City within two days' travel. The D. and Rio Grande followed, connecting with Pueblo, 120 m. s., and after it came the D. South Park and Pacific, and the Golden Boulder and Caribou, making 5 home roads, 4 of which centre in D., beside the great trunk line connections.

The city covers in all about 4 sq. m. of closely built-up territory, and is laid out in broad and regular streets running n.w. and s.e., and lined on either side with beautiful shade trees. The buildings are almost entirely of brick, though here and there a noble structure of stone appears. Water, for drinking and household uses, is supplied by several hundred artesian wells, some having a depth of 1,200 ft., and also from the Platte river by means of the

Holly system, which is provided with 50 m. of distributing mains, and affords an average daily supply of nearly 5.000,000 gallons; while for irrigation purposes water is obtained from a point 12 m. s. of the city by a system of artificial ditches. D. derives its chief revenue from its interest in the mining, agricultural, and stock raising industries of the state. It receives on an average 584 tons of ore daily, principally silver, has four large smelting works in its suburbs, and a public sampling establishment where nearly 22,000 tons of silver ore were received and sold in 1886. The deposit of bullion at the U. S mint in D. in 1887 had a market value of $1,843,891, an increase of 28 per cent. over the aggregate of 1886. A large part of the machinery used in mining is now manufactured in the city. The agricultural products of the state now average $12,000,000 per annum, and for this industry D. manufactures all kinds of implements, provides seed, and converts a large portion of the cereals into flour. Stock-raising has furnished the city, its great corporations, and capitalists the greater part of their wealth, and D. is now the chief depot for the sale of hides, wool, and tallow. The city had a total revenue 1886 of $452,648, of which $301,362 were derived from taxes. There were then 219 manufacturing establishments, employing 4,056 persons, paying $2,100,998 in wages, and yielding products valued at $24,045,006. In 1887, the establishments were estimated at 240, employees 5,000, wages $3,000,000, and products $30,000,000.

D. is supplied with gas and electricity, and has an extended system of horse, cable, and electric street railroads. Its chief pride centres in its churches, schools, and public buildings. The former, which entitles it to rank after Brooklyn, number (1888) 67, and are divided denominationally as follows: Meth. Episc, 17; Bap., 9; Congl., 8; Presb., 7; Rom. Cath., 6; Prot Episc. and Lutheran, each 5; Unit. Brethren, 3; Hebrew, 2; and Christian, Ref., Unitarian, New Jerusalem, and Seventh Day Adventist, each one. The educational system is liberally established and ably supported. There are 3 school districts, in E., W., and N. D. The former has 14 schools, 120 teachers, and from 5,000 to 8,000 pupils in daily attendance; W. D. has 5 schools, and nearly 2,000 pupils; and N. D. ample accommodations for 1,500 pupils. Other educational institutions include D. Univ.; Jarvis Hall, for boys; St. Mary's School, Rom. Cath.; Wolfe Hall, young ladies' seminary; and a high school and library, completed 1888. The public buildings include the city hall, Tabor opera house, Duff block, county courthouse, U. S. Mint (for assays only), and capitol building, now in course of erection at a cost cf $1,000,000. The latter will provide quarters for the gov and state officials, the supreme court, and the legislature, and will be 383 ft. long and 313 wide, and from its location on Capitol Hill will command a grand view of the city and its neighboring mountain wonders. D. has 6 national banks with an aggregate capital of $1,220,000, 2 state banks, capital $150,000, 3 private banks, and 5 loan and investment companies; and 3 daily and several weekly newspapers. The city has furnished the U. S. senate 3 members, Messrs. H. A. W. Tabor, N. P. Hill, and Henry M. Teller; the house of representatives one, James Belford; the dept. of the interior a sec., Henry M. Teller; the state of Colo. a gov., Alva Adams; and the D. and Rio Grande railroad a pres., D. H. Moffat, and an attor. Edward O. Wolcott, all self-educated and with more or less romantic careers.

The progress of D. has been rapid in every respect and substantial withal. It has experienced costly disasters by fire, flood, financial panics, and industrial depressions; but through the eminently practical character of its citizens its recuperations have been speedy. In 1885, the building inspector issued permits for the erection of 403 new buildings; and 1886, he issued 709 for new buildings and improvements that cost $2,000,661. In 1887, the real estate sales amounted to $29,345,451; 6 churches, 3 school-houses, nearly 900 dwellings, several new business blocks, and 35 miscellaneous buildings were erected, and the total value of improvements in the city proper was $2,971,770, and for the city and its suburbs nearly $5,000,000. Pop. (1870) 4,759; (1880) 35,629; (1886) 75,000.

DENY, v. *dĕ-nī'* [F. *dénier*, to deny; *déni*, denial—from L. *denĕgārĕ*, to deny thoroughly—from *de*, *nego*, I deny: It. *denegare*]: to declare untrue; to contradict; to disown; to refuse; to reject; not to afford, as to deny one's self. DENY'ING, imp. DENIED, pp. *dė-nīd'*. DENI'ER, n. *-ėr*, one who. DENI'ABLE, a. *-ă-bl*, capable of being denied or disowned. DENI'AL, n. *-ăl*, a refusal.—SYN. of 'deny': to refuse; contradict; disavow; disown; repudiate; disclaim; withhold; abjure.

DEOBSTRUENT, n. *dĕ-ŏb'strû-ĕnt* [L. *de*, *obstrŭĕns*, building up to stop the way]: a medicine which opens the natural passages for the fluids of the body: they have the property of removing obstructions, especially in the lymphatic system (see LYMPHATICS). The glands of the thorax and abdomen, as well as the lymphatic and lacteal glands, are subject to enlargements. formerly ascribed to obstructions of their outlets, or of the vessels in connection with them; against all of these states, deobstruents were employed with varying success. The favorite deobstruent remedies are mercury. iodine, and bromine; blisters and friction, with stimulating liniments, have a like action in some cases: ADJ. having the power to remove obstructions.

DEOBUND, *dē'o-bŭnd:* town of India, in the British dist. of Saharunpore, N. W. Provinces, 20 m. from Saharunpore, on the railway route from Saharunpore to Mozuffurnuggur. It is in an open cultivated country between the rivers Hindun and Kali-Nuddee. one a branch of the Jumna, the other of the Ganges. Pop. (1881) 22,116.

DEODAND, n. *dē'ō-dănd* [L. *dĕō*, to God; *dandus*, to be given]: in *law*, formerly, a personal chattel, a thing which had caused the death of a person, and for that reason was forfeited to the king, and applied by him to pious uses, or given to God, as the term implies. The rule did not apply where the instrument had been intentionally used for the purpose of causing death, as in cases of murder and homicide. Blackstone traces the origin of the custom to prayers for the souls of the dead, and asserts that deodands were designed 'as an expiation for the souls of such as were snatched away by sudden death; in the same manner as the apparel of a stranger, who was found dead, was applied to purchase masses for the good of his soul.' The more probable view is, that it originated in the natural horror for whatever has been the instrument of so dreadful an occurrence; as in the Jewish law, that if 'an ox gore a man that he die, the ox shall be stoned, and his flesh shall not be eaten;' or the old English law, that a well in which a person was drowned should be filled up under the inspection of the coroner. Similar regulations are in the legal systems of most nations. The law of D. was abolished by statute 9 and 10 Vict. c. 62.

DEODAR, *dē-o-dâr'*: native state under the political agency of Palanpur, attached to the province of Bombay, in the n.w. of Guzerat; abt. 440 sq. m.; one of the pettiest states in the world. It is subdivided into as many independent communities as there are villages—the whole being, for external purposes, under the gratuitous protection of the British government. The principal village, bearing the name of Deodar, is in lat. 24° 9′ n., and long. 71° 49′ e. The district was forced on the E. India Company 1819, as having become a refuge of marauders. Pop. abt. 20,000.

DEODAR': see CEDAR.

DEODORIZE, v. *dē-ō'dėr-īz* [L. *de, odor*, a smell, good or bad]: to deprive of a fetid or bad smell, as cesspools; to disinfect. DEO'DORI'ZING, imp. DEO'DORIZED, pp. *-īzd.* DEO'DORI'ZER, n. *-ī'zėr*, or DEO'DORANT, n. *-dėr-ănt*, a substance that absorbs or destroys smells; a *disinfectant* destroys not only smells, but also the poisons accompanying them, by acting chemically. DEO'DORIZA'TION, n. *-ī-zā'shŭn*, the art or act of depriving of odor or smell: see ANTISEPTICS: DISINFECTANTS.

D'ÉON, CHEVALIER: see ÉON DE BEAUMONT.

DEONTOLOGY, n. *dē'ŏn-tŏl'ŏ-jĭ* [Gr. *deonta*, things fitting, moral duties; *logos*, discourse]: the science which relates to duty or moral obligations. DE'ONTOLOG'ICAL, a. *-lŏj'ĭ-kăl*, pertaining to. DE'ONTOL'OGIST, n. *-jĭst*, one who.

DEORI, *dē-o-rē'* or *dē-ō'rē*, sometimes distinguished as BURA DEORI, OR GREAT DEORI: town of Hindustan; lat. 23° 22′ n., and long. 79° 4′ e.; 1,705 ft. above the level of the sea. Though it has been little noticed by travellers or writers, it appears worthy of its second name mentioned above, for, on its being burned down by a freebooter before English authority was established here, 30,000 people are said to have perished in the flames. It is in the Nagpore division of the Central Provinces, on the table-land, whence flow the Sone to the Ganges, and the Nerbudda to the

Arabian Sea; so that the territory of Saugor and Nerbudda, within which it is contained, is common to the two principal basins of n. India. The place is about half-way between the better-known cities of Saugor and Gurrah, being 44 m. s.e. of the former, and 41 n.w. of the latter. Pop. abt. 4,000.

DEOXIDATE, v. *dĕ-ŏks′ĭ-dāt* [L. *de*, and *oxidate*]: to deprive of oxygen. DEOX′IDATING, imp. DEOX′IDATED, pp. DEOX′IDA′TION, n. *-dā′shŭn*, the process of withdrawing the oxygen from a compound, as in the reduction of the native peroxide of iron in the smelting furnaces to the condition of metallic iron: on the small scale, in experimental inquiries, it may be carried on before the BLOW-PIPE (q.v.), where the inner or reducing flame is essentially a deoxidating one. DEOX′IDIZE, v. *-dīz*, to deprive of oxygen; also DEOX′IGENATE, v. *jĕn-āt*. *Note.*—DEOXIDIZE is used in the same sense as DEOXIDATE, and is more commonly in use; strictly, however, DEOXIDIZE is to take oxygen out of a chemical compound and thus form a new one. DEOXIGENATE is to take away oxygen that has been merely dissolved or mixed, and has not been in chemical combination.

DEPART, v. *dĕ-pârt′* [F. *départir*, to depart, to distribute—from OF. *despartir*—from L. *dispatīrĕ*, to distribute—from *de* for *dis; partīrī*, to part, to share]: to quit; to go from; to leave; to forsake; to desist; to die or decease: N. in *OE.*, departure; death. DEPAR′TING, imp.: N. departure. DEPAR′TED, pp. DEPAR′TURE, n. *-tūr*, the act of departing; a moving from; death or decease; a forsaking; in *nav.*, distance made e. or w. by a ship at sea: see SAILINGS: DEAD RECKONING.—SYN. of ‘departure’: demise; release; exit; separation; removal; deviation; abandonment.

DEPARTMENT, n. *dĕ-pârt′mĕnt* [F. *département*—from *départir*, to depart (see DEPART)]: a separate room or office for business; a branch of business. In *France*, a division of territory equivalent to an English county. In the *United States*, a sub-division of executive governmental work, under the charge of a member of the president's cabinet, known as a secretary: the departments are—State, Treasury, War, Navy, Justice, Post-office, Interior, Agriculture. DE′PARTMEN′TAL, a. *-mĕn′tăl*, pertaining to a department or division.

DEPART′MENT: a territorial division in France. Previous to the Revolution, France was divided into provinces; but in 1790 Mirabeau rose in the constituent assembly, and declared that, after having abolished aristocracy, it was neither convenient nor safe to preserve these provincial divisions. He alleged that they were too large, that they tended to concentrate the administrative power in the hands of a few, and that such power soon becomes aristocratic of necessity. He suggested, therefore, a minuter territorial division, as a carrying out of the principles of the Revolution. This expression of opinion was followed by a decree of the assembly, dated 1790, Feb. 16, ordering the abolition of the old provincial divisions (34 in number), and the redistribution of the land into 83 departments. During the year 8 of he Revolution, these were increased to 98; in 1808 the empire consisted of 127; at the fall of Napoleon, of 130; and at present it consists of 87, including the sadly diminished Department of Haut Rhin (from 1871–79, 'the territory of Belfort'). Originally, it was intended that the departments should be governed by persons elected by the citizens; but this plan did not suit the views of the first consul, who placed over each department a prefect, and a *conseil de préfecture.* The departments were again subdivided into arrondissements, over each of which was placed a sub-prefect (*sous-préfet*). The right of naming these functionaries was reserved to the chief of the state. This system of departmental administration is still in force.

DEPASTURE, v. *dě-pas'tūr* [L. *de*, *pastus*, a feeding or eating (see PASTURE)]: to feed; to graze; to eat up. **DEPAS'TURING**, imp. **DEPAS'TURED**, pp. *-tūrd.*

DEPAUPERATE, v. *dě-paw'pėr-āt* [L. *de*, *pauperātus*, made poor—from *pauper*, poor]: to make thoroughly poor, to impoverish: ADJ. in *bot.*, impoverished. **DEPAU'PERATING**, imp. **DEPAU'PERATED**, pp.

DEPEND, v. *dě-pěnd'* [L. *dependērě*, to hang down—from *de*, *penděō*, I hang: It. *dependere;* F. *dependre*, to be dependent on]: to hang down from; to be connected with a thing as a cause of existence, etc.; to be subservient; to rely on; to trust; to confide. **DEPEND'ING**, imp. **DEPEND'ED**, pp. **DEPEND'ABLE**, a. *-ă-bl*, that may be depended on; trustworthy. **DEPEN'DENT** [L. *dependens*, hanging down], or **DEPEN'DANT**, a. [F.]: hanging from; relying on; subject to the power of. **DEPEN'DANT**, n. one who is at the disposal of another; one relying on another for support or favor; a servant or retainer. **DEPEN'DENCE**, n. *-děns*, reliance; trust; connection; state of being at the disposal of another; that which is attached to something else as subordinate. **DEPEN'DENTLY**, ad. *-děnt-lĭ.* **DEPEN'DENCY**, n. *-děnsĭ*, same as *dependence*, but generally restricted to a territory or colony distant from the state to which it is subject. **DEPEND UPON**, to rely on; to trust to with confidence.

DEPEND'ING ACTION, in Scottish Law: an action from the moment of citation, until it be finally decided by the house of lords, should it be appealed to that ultimate tribunal.

DEPEW, *dě-pū'*, CHAUNCEY MITCHELL: b. Peekskill, N. Y., 1834, Apr. 23: lawyer. He is of Huguenot and Puritan ancestry, graduated at Yale College 1856, engaged in the presidential campaign for Fremont immediately afterward, studied law, and was admitted to the bar 1858. In 1860, he worked for the election of Lincoln; 1861–2, was a member of the N. Y. assembly and served some time as chairman of the committee of ways and means and as acting speaker; 1863, elected sec. of state by over 30,000 majority; 1865, declined a renomination; and 1866, was commissioned collector of the port of New York by Pres. Johnson, who afterward tore up the commission in a quarrel with Senator Morgan. He was appointed U. S.

minister to Japan, and after holding the commission a month declined, and began his railroad career with the appointment as attor. for the New York and Harlem railroad by Cornelius Vanderbilt. He was made attor. and a director of the consolidated Hudson River and New York Central railroads 1869, general counsel of the whole Vanderbilt system 1875, second vice-pres. of the reorganized New York Central railroad 1882, and pres. 1885. His political career since 1866 embraces his unsuccessful candidacy for lieut.gov. on the liberal republican ticket 1872, his election by the legislature as a regent of the State Univ. 1874, his candidacy for U. S. senator to succeed Thomas C. Platt, in which he withdrew his name after 82 days of balloting 1881, his declination of the U. S. senatorship tendered by the republicans of the legislature 1884, and his candidacy for the pres. nomination in the national convention 1888. He has an international reputation as an unusually entertaining after-dinner speaker, is constantly in request as a lecturer, and has delivered several addresses of public importance, notably that at the unveiling of the Bartholdi statue, for which the French govt. presented him two vases, a costly bronze and a unique Sevres. Mr. D. is one of the corporation of Yale Univ., and is active in religious and benevolent work.

DE PEYSTER, *de pīs'tėr*, **ARENT SCHUYLER**: 1736, June 27—1832, Nov.; b. New York: grandson of Col. Abraham Schuyler and nephew of Col. Peter Schuyler: soldier. When 19 years old he enlisted in the 8th foot regt. for service in the war with France, and was on duty with his uncle at various important posts. In the revolutionary war he was a col. in the royal army, was at different times in command of the British posts of Detroit, Mackinac, and elsewhere in Canada, and by his influence among the Indians of the northwest converted them from enemies to friends of the British cause. After the war he retired to Dumfries, Scotland, and enlisted and drilled a regt. of local volunteers, which included Robert Burns, during the French Revolution.

DE PEYSTER, JOHANNES: 1600–1685; b. Haarlem, Holland: merchant. He was one of the early settlers of New York, became prominent in public affairs during the Dutch possession, was one of the last to swear allegiance to the crown after the English succeeded to the govt., served several times as alderman and deputy mayor, and was frequently urged to become mayor by the British residents, but declined from ignorance of the language. One son, Abraham, became chief justice, pres. of the king's council, and acting gov.; another, Johannes, mayor; a third, Isaac, member of the legislature; and a fourth, Cornelius, first chamberlain of New York.

DEPHAL, *dĕp'hal* (*Artocarpus Lakoocha*): tree of the same genus with the Bread-fruit (q.v.) and Jack (q.v.), native of the south of India, and frequently cultivated in the north of that country. The fruit is eaten, but is inferior to the Jack. The juice, like that of the Bread-fruit, is tenacious, and is used for bird-lime. The root is used for dyeing yellow. The D. is a large tree, and its timber is valued for a variety of purposes.

DEPHLOGISTICATE, v. *dē'flō-jĭs'tĭ-kāt* [L. *de*, and *phlogiston*]: to deprive of phlogiston, the supposed principle of inflammability. DE'PHLOGIS'TICATING, imp. DE'PHLOGIS'TICATED, pp. DE'PHLOGISTICA'TION, n. *-kā'shŭn*, the operation by which bodies are deprived of phlogiston (q.v.).

DEPICT, v. *dĕ-pĭkt'* [L. *depictus*, depicted—from *de, pictus*, painted]: to paint; to portray; to describe or represent in words. DEPIC'TING, imp. DEPIC'TED, pp.

DEPILATE, v. *dĕp'ĭ-lāt* [L. *depilātus*, having the hair pulled out—from *de, pilus*, a hair: F. *dépiler*, to take the hair off]: to strip off hair. DEP'ILATING, imp. DEP'ILATED, pp. DEP'ILA'TION, n. *-lā'shŭn* [F.—L.]: the act of taking the hair off; loss of hair. DEPILATORY, a. *dĕ-pĭl'ă-tėr-ĭ* called also EPILATORY [OF . *depilatoire*]: having the quality or power of removing hair: N. any ointment or lotion for removing superfluous hair from the skin. Depilatories were extensively used by the ancients, but are now used only for the face, and for the removal of the hair from the scalp in the treatment of certain diseases. The caustic alkalies and alkaline earths are generally used, and a good recipe is to mix five parts of caustic or slaked lime, ten parts of carbonate of soda, and forty parts of lard. The tersulphuret of arsenic (commonly known as orpiment) is occasionally used, but it is dangerous, especially if there be the least abrasion of the skin. A mixture of caustic lime and orpiment constitutes some of the depilatories for sale in the shops, and it is believed that the Turkish *Rusma* is composed of these ingredients. A very active and comparatively (not absolutely) safe compound is a strong solution of sulphuret of barium made into a paste with starch, immediately applied to the part from which the hair is to be removed, and allowed to remain for five or ten minutes.

DEPLANATE, a. *dē'plăn-āt* [L. *deplanātus*—from *plānus*, level or flat]: in *bot.*, flattened.

DEPLETE, v. *dĕ-plēt'* [L. *deplētus*, emptied out—from *de, plĕō*, I fill]: to empty out; to reduce in quantity by taking away. DEPLE'TING, imp. DEPLE'TED, pp. DEPLE'TION, n. *-shŭn*, act of emptying out; the act of diminishing the quantity contained. DEPLE'TORY, a. *-tėr-ĭ*, calculated to diminish fulness of habit; also DEPLE'TIVE, a. *-tĭv*.

DEPLORE, v. *dĕ-plōr'* [F. *déplorer*—from L. *deplorārĕ*, to weep bitterly—from *de, ploro*, I wail or howl: It. *deplorare*]: to weep bitterly for; to lament; to mourn; to bewail; to express or feel deep grief for. DEPLO'RING, imp. DEPLORED', pp. *-plōrd'*. DEPLO'RER, n. one who. DEPLO'RABLE, a. *-ră-bl* [F.]: lamentable; sad; grievous; miserable. DEPLO'RABLY, ad. *-blĭ*. DEPLO'RABLENESS, n. *-bl-nĕs*, wretchedness; miserable state. DEPLO'RABIL'ITY, n. *-ră-bĭl'ĭ-tĭ*, state of being deplored; deplorableness. DEPLO'-

RINGLY, ad. *-lĭ.*—SYN. of 'deplore': to mourn; bemoan; complain; murmur; repine; regret; weep.

DEPLOY, v. *dĕ-ploy'* [F. *déployer*, to unfold—from L. *de*, *plĭco*, I fold]: to unfold; to open; to extend; to form a more extended front, as soldiers. DEPLOY'ING, imp. DEPLOYED', pp. *-ployd'*. DEPLOY'MENT, n. the opening out of a body of men in order to extend their front, while lessening their depth, as a column of troops.

DEPLUME, v. *dĕ-plôm'* [F. *déplumer*—from L. *de*, away; *pluma*, a feather]: to pluck or strip the feathers from; to deprive of plumage; to lay bare; to expose. DEPLUMATION, n. *dē-plô-mā'shŭn*, a plucking or stripping of the feathers; a loss of feathers.

DEPOLARIZE, v. *dē-pō'lėr-īz* [L. *de*, and *polarize*]: to deprive of polarity. DEPO'LARIZA'TION, n. *-ī-zā'shŭn*, the act of depriving of polarity.

DEPONE, v. *de-pōn'* [L. *dĕpōnĕrĕ*, to lay or place down —from *de*, *pono*, I place]: to lay or place down solemnly in words; to testify on oath in a court. DEPO'NING, imp. DEPONED', pp. *-pōnd'*. DEPO'NENT, a. *-pō'nĕnt* [L. *deponen'tem*, laying down]: in *Latin grammar*, applied to verbs having a passive form but an active signification; so called because they, as it were, lay down or dispense with the signification proper to their form. Such verbs had all originally a reflexive meaning, like the middle voice in Greek verbs; thus, *aversor*, 'I detest,' means radically, 'I turn myself away from.' DEPONENT, n. one who testifies on oath; a witness.

DEPOPULATE, v. *dĕ-pŏp'ū-lāt* [L. *depopŭlātus*, laid waste—from *de*, *pŏpŭlus*, the people]: to deprive of inhabitants; to unpeople; to lay waste. DEPOP'ULATING, imp. DEPOP'ULATED, pp. DEPOP'ULA'TION, n. *-lā'shŭn* [F.—L.]. DEPOP'ULATOR, n. *-tėr*, one who.

DEPORT, v. *dĕ-pōrt'* [F. *déporter*, to banish—from L. *deportārĕ*, to carry off—from *de*, *porto*, I carry: It. *deportare*, to exile]: to carry from one country to another; to behave or demean, followed by *self*. DEPORT'ING, imp. DEPORT'ED, pp. DEPORTATION, n. *dē'pōr-tā'shŭn* [F.—L.]: forcible and general removal from one country to another; exile; banishment. DEPORT'MENT, n. *-mĕnt* [F. *déportement*, demeanor]: conduct; demeanor; carriage; manner of acting in relation to the duties of life.—SYN. of 'deportment': gait; walk; behavior; demeanor; bearing.

DEPOSE, v. *dĕ-pōz'* [F. *déposer*—from L. *de*, *pausārĕ*, to pause; mid. L. *pausārĕ* for *ponĕrĕ*, to place: It. *depositare* (see DEPOSIT)]: to set down from an office; to degrade; to divest of office; to dethrone, to bear witness on oath. DEPO'SING, imp. *-zing*. DEPOSED', pp. *-pōzd'*. DEPO'SER, n. one who.

DEPOSIT, n. *dĕ-pŏz'ĭt* [F. *dépositer*, to lay down as a gage—from L. *depositum*, a thing laid down—from *de*, *pono*, I place]: that which is intrusted to another, as money in a bank; a pledge or pawn; anything laid down or lodged; in *geol.*, soil or matter laid down from water or otherwise, and forming a layer or stratum; such materials are obtained by denudation (q.v.), and are classified as marine, lacustrine, fluviatile, etc.; in *med.*, the secretion of a solid morbid substance on a diseased surface: V. to lay, throw down, or lodge; to lay up; to commit to, as a pledge; to lodge money in a bank. **Depos'iting**, imp. **Depos'ited**, pp. **Depos'itary**, n. *-ĭ-ter-ĭ*, one with whom anything is lodged or intrusted for safe keeping. **Depository**, n. *dĕ-pŏz'ĭ-tėr-ĭ*, a place where anything is laid for safe keeping. **Depos'itor**, n. *-tėr*, one who makes a deposit. **Deposition**, n. *dē'pō-zĭsh'ŭn* [F.—L.]: the act of laying or throwing down; that which is laid down; the giving testimony under oath; a written copy of the same attested by the signature of the witness; the depriving of office or dignity. **On deposit**, in charge or safe keeping, as money.

DEPOS'IT, in the old Civil or Roman Law: a real contract, the simplest of all contracts, consisting merely in the delivery of an article by one person to another, to be kept without remuneration, and to be restored *in specie* (i e. in its kind or form) as soon as the depositor should require.—*Inst.* iii. 15, s. 3. Return when required was the sole condition of the contract; and no obligation was incurred by the depositary but to exercise ordinary care in preservation of the article. The civil law recognized a distinction, as to the value which might be recovered by the depositor in case of loss, between the case of articles voluntarily deposited, and those which came into the hands of the depositary by the misfortune of the owner, as by fire or shipwreck. In the latter case, double the value of the article might be recovered. There was also a special provision by the edict *Nautæ, caupones, stabularii,* whereby shipmasters, inn-keepers, and stablemen were compelled to exercise more than ordinary vigilance over the goods of their customers and passengers.

The principles of the civil law as to deposit have been universally adopted by modern nations. Lord Stair lays down that the depositary is 'not liable for light faults, or for the perishing or deterioration of the thing deposited by casualty or accident.' The article must be restored when demanded, and failure to do this will involve the depositary in liability for the consequences.

Deposit, in Law, is a branch of bailments (q.v.), which includes also loans, pledges, and letting and hiring. From each of these, deposit is distinct. It is defined by Judge Story to be 'a bailment of goods, to be kept by the bailee without reward, and delivered according to the object and purpose of the trust.'—*Story on Bailments*, c. ii.

The chief questions which have arisen in modern times relate to the amount of care which the depositary is bound to exercise. Judge Story lays down the principle to be, not the care which a man actually takes of his own affairs, but that which a reasonable being would use, and cites in support of his view the case Doorman *v.* Jenkins, ii. Ad., and Ellis 256, where a person intrusted with money placed it in his own cash-box, and the box having been stolen, the depositary was yet held liable for negligence. So also with jewels or other valuables—the nature of the article implies extra care. Where, however, a sealed packet or locked box is deposited, the question arises as to the liability of the depositary. Erskine lays it down broadly, that where such a deposit is made without showing the contents, the depositary incurs no extra liability. But Story takes a distinction, and states that if the depositary had reasonable ground to believe the contents were valuable, he incurs liability accordingly. The immense value of the timber-trade of the United States raises questions as to the liability of a landowner for timber left by the river on his ground. On this point, Story indicates that the smallest amount of liability is incurred. Whether or not the depositary may make use of goods left in his charge, is said by the same author to depend on the particular circumstances. If the article would benefit by use, then such use is allowable; but if injury were likely to accrue, it is not. If use is a matter indifferent, then the depositary is not entitled to the use. The admirable work of Story on Bailments is the best authority on this subject.

DEPOSITION, in Law: testimony of a witness set down in writing. Depositions are taken either by a judge or by a commissioner specially appointed by him for that purpose. The questions to which the depositions are answers are usually put by the legal representatives of the parties to the suit, under the control of the court or commissioner, and the answers are taken down by the clerk of court, or by a clerk specially appointed. If the competency of the questions or the admissibility of the witnesses be objected to, the objection must be stated to the court or commissioner. The latter may either dispose of the objection at the time, or reserve it for the opinion of the court by which he was appointed. It is a rule in the laws of evidence of all countries that the deposition cannot be read where the witness might be himself produced, because his oral testimony is the best evidence, and secondary evidence is never admissible. Where he is dead, however, or insane, or beyond the jurisdiction of the court, his deposition then becomes the best evidence, and may be read in court.

DEPOSITION OF A CLERGYMAN, in the Established Church of Scotland: act of depriving of the clerical office. The minister of a parish who has been guilty either of immoral and scandalous conduct, or of preaching or otherwise publishing doctrines contrary to the standards of the church to which he has declared his adherence, or of contumaciously setting aside the authority of the Presbyterian church-courts, may be deposed from his office by the church-courts. Thus he is deprived not only of his ecclesiastical dignity, but of the temporalities of his benefice (stat. 1592, c. 115), and the benefice becomes vacant as if he were dead. He may, however, be restored to his position as a minister of the church, by the general assembly, but not to his benefice. Sentence of deposition cannot be pronounced by a presbytery in the absence of the minister, except by authority of the general assembly. For the similar step in the Church of England, see DEPRIVATION OF A CLERGYMAN.

DEPOSITION OF A MINISTER, in Churches governed congregationally, Baptist and others: act of terminating a minister's bishopric or pastorate in a local church, with condemnation for some scandalous or grievous offense. The offense must be such as is held to vitiate either his Christian character or the fundamental Christianity of his teaching. Deposition is the act of the church interested; it is done after full trial; involves or may consist in excommunication or withdrawal of Christian fellowship; but cannot vacate the minister's right to salary under a legal contract with the church or parish, unless the deposition be done according to the usage of the body of churches with which the church is specially affiliated. In such grave cases the almost universal usage is that the church shall proceed to this extreme step only with the aid and advice and consenting action of a council of churches which it has especially called to its assistance for trial of the case. See COUNCIL.

DEPOT, n. *dĕ-pō'*, DEPOTS, n. plu. *dĕ-pōz'* [F. *dépôt*, a deposit—from L. *depositus*, laid or put down]: a place where stores are kept; the body of troops in which recruits are trained, and from which men are supplied for vacancies in corps abroad; in the *British army*, since 1872, every battalion, whether at home or abroad, has a depot of two companies: the depots of two battalions constitute the depot-centre, or sub-district brigade, to which the volunteers and militia of the sub-district are affiliated; and in time of war, the depot would expand into a third battalion. In *merchandising*, depot is a warehouse; an open place or covered shed where goods are laid up. In the *United States*, the name, proper for a freight-station on a railroad, has been applied also to passenger-stations; of late, the latter are sometimes called stations.

DEPRAVE, v. *dĕ-prāv'* [F. *dépraver*—from L. *depravārĕ*, to pervert—from *de*, *prāvus*, crooked, wicked: It. *depravare*]: to make bad or worse; to vitiate; to corrupt. DEPRA'VING, imp. DEPRAVED', pp. *-prāvd'*. ADJ. corrupt; abandoned; vicious. DEPRA'VEDLY, ad. *-vĕd-lĭ* or *-prāvd'lĭ*. DEPRAVATION, n. *dĕp'ră-vā'shŭn* [F.—L.]. the act of corrupting anything or making it bad; the state of being made bad; depravity; in *OE.*, defamation. DEPRAV'ITY, n. *-prăv'ĭ-tĭ*, corruption; wickedness; destitution of moral principles. DEPRA'VEDNESS, n. DEPRA'VER, n. *-vėr*, one who.—SYN. of 'depravity': corruption; depravation; vititation; vice; wickedness; degeneracy; contamination; pollution.

DEPRECATE, v. *dĕp'rĕ-kāt* [L. *deprĕcātus*, averted by praying—from *de*, *precor*, I pray, I beg]: to pray or wish that a present evil may be removed, or an expected one averted; to pray against. DEP'RECATING, imp. DEP'RECATED, pp. DEP'RECATOR, n. one who. DEP'RECA'TION, n. *-kā'shŭn* [F.—L.]: a praying against; an entreaty. DEP'-

RECA'TINGLY, ad. *-lĭ*. DEP'RECA'TIVE, a. *-tĭv*, or DEP'RECA'TORY, a. *-kā'tėr-ĭ*, tending to avert evil; having the form of a prayer. DEP'RECA'TIVELY, ad. *-lĭ*.

DEPRECIATE, v. *dĕ-prē'shĭ-āt* [mid. L. *depretĭātus*, diminished in price: F. *déprécier*, to undervalue—from mid. L. *depretĭārĕ*, to depreciate—from *de*, *prĕtĭŭm*, a price]: to lessen the price or value of a thing; to decry; to undervalue; to become of less worth. DEPRE'CIATING, imp. DEPRE'CIATED, pp. DEPRE'CIA'TION, n. *-ā'shŭn* [F.—L.]: the act of lessening the value of anything; a falling in value. DEPRE'CIA'TIVE, a. *-ā'tĭv*, or DEPRE'CIA'TORY, a. *-ā'tėr-ĭ*, tending to depreciate; undervaluing. DEPRE'CIA'TOR, n. *-tėr*, one who.—SYN. of 'depreciate': to traduce; disparage; detract; lower.

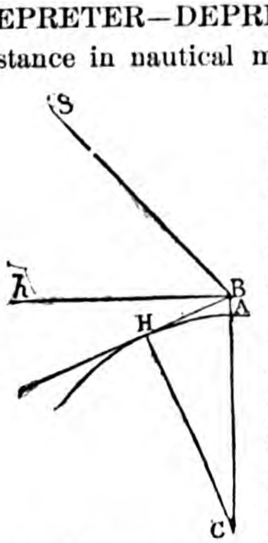
DEPREDATE, v. *dĕp'rĕ-dāt* [mid. L. *deprædātus*, plundered thoroughly—from L. *de*, *prædātus*, plundered: It. *depredare*, to pillage, to plunder]: to rob; to plunder; to pillage, to take the property of an enemy; to spoil. DEP'REDATING, imp. DEP'REDATED, pp. DEP'REDA'TOR, n. a robber; a plunderer. DEP'REDA'TION, n. *-dā'shŭn* [F.—L.]: the act of spoiling or pillaging. DEP'REDA'TORY, a. *-tėr-ĭ*, plundering; spoiling.

DEPRESS, v. *dĕ-prĕs'* [L. *depressus*, pressed or weighed down—from *de*, *pressus*, pressed]: to press down to a lower state or position; to lower; to render languid or dull; to deject or make sad; to lower in value. DEPRES'SING, imp. DEPRESSED', pp. *dĕ-prĕst'*. ADJ. in *bot.*, applied to a solid organ having the appearance of being flattened from above downwards. DEPRES'SINGLY, ad. *-lĭ*. DEPRES'SION, n. *-prĕsh'ŭn* [F.—L.]: act of depressing; the state of being depressed or lowered; a hollow; the sinking in of a part of a surface; a sinking of the spirits; a low state of trade or business. DEPRES'SIVE, a. *-prĕs'sĭv*, tending to depress. DEPRES'SOR, n. *-sėr*, in *anat.*, a muscle which pulls an organ downwards, as the lower jaw, or the lip. ANGLE OF DEPRESSION, in *astron.*, the angle through which a celestial object appears depressed below the horizontal plane, drawn through the eye of a spectator looking down upon the object: see DEPRESSION OF THE HORIZON. DEPRESSANT, n. *dĕ-prĕs'ănt*, remedial agents that repress the circulation of the blood and contractility of the heart.—SYN. of 'depress': to sink; deject; abase; cast down; degrade; humble; discourage; dispirit; sadden; embarrass; cheapen;—of 'depression': abasement; fall; humiliation; reduction; dejection; melancholy; sinking; cavity; despondency.

DEPRES'SION, or DIP, OF THE HORIZON: the angle through which the sea-horizon appears depressed in consequence of the elevation of the spectator.

Let A be a point on the surface of the earth, B a point situated in a vertical line from A. Let BH be a tangent to the earth's surface drawn from B, B*h* a line in the same vertical plane perpendicular to AB. The angle *h*BH is the *true* dip of the horizon to a spectator at B.

The true dip measured in minutes is equal to the distance in nautical miles of the visible horizon. Let C be the centre of curvature of the surface; then, since CHB is a right angle, the angle $hBH = HCA$; and the minutes in this angle are the nautical miles in the arc AH. To find this angle in minutes or nautical miles, the rule is: Multiply the sq. root of the height in ft. by 1·063.



The true dip of the horizon, however, is not exactly the same as its apparent depression. The apparent sea-horizon is raised above its true place by *refraction* through an angle, which varies according to the state of the atmosphere and the relative temperatures of the air and water, the variation ranging from one-third to one twenty-third of the amount of the true dip. The rule commonly employed is to diminish the true dip by about one-fourteenth of its amount, to find the apparent dip.

If S be a star or the sun in the same vertical plane with ABH, and an observation of the altitude above the sea-horizon be made by means of a sextant from the point B (as from the deck of a vessel), the apparent dip of the horizon must be subtracted from the observed angle, in order to find the altitude of the sun. Owing to the uncertainty of the amount of refraction, the nearest minute to the dip given in the tables is usually taken. The following table gives a sample of the amount of the apparent dip under ordinary state of the atmosphere and equal temperature of air and water. See Raper's *Practice of Navigation.*

Height. Feet.	Dip. m. s.	Height. Feet.	Dip. m. s.
0	0 0	8	2 50
1	1 0	9	3 0
2	1 20	10	3 10
3	1 40	20	4 20
4	2 0	30	5 20
5	2 10	40	6 10
6	2 20	50	7 0
7	2 40	100	9 50

DEPRETER, n. *dĕp'rĕ-tėr:* plastering, done to represent tooled ashlar-work. It is first picked up and floated as for set or stucco, and then small stones are forced on dry from a board.

DEPRIVA'TION OF A CLER'GYMAN, in the Church of England: act of depriving of the clerical office. This may be either (1) by a sentence declaratory in the proper court, on the ground of attainder or conviction of treason, felony, or any other infamous crime, or of conviction for heresy, infidelity, or gross immorality, or for farming or trading contrary to law; or (2) in pursuance of divers penal statutes, which declare the benefice void for some nonfeasance or neglect, or else some malfeasance or crime, as simony; for maintaining any doctrine in derogation of the king's supremacy, or of the Thirty-nine Articles, or the Book of Common Prayer; for neglecting to read the liturgy and articles in the church, and to declare assent to the same, within two months after induction; for using any other form of prayer than the liturgy of the Church of England; for continued neglect, after order from the bishop, followed by sequestration, to reside on the benefice. In these latter cases, the benefice is void, without any formal sentence of deprivation (Stephen's *Com.* iii. 37). A bishop may be deprived of his bishopric, but cannot be deposed, as may be done in the case of a Presbyterian clergyman, the character of a bishop, like that of a priest, being held to be indelible. The tribunal by which the bp. of Clogher was deprived in 1822 consisted of the archbishop and the other bishops of the province; and this precedent having been established, would probably be adhered to on any future occasion, notwithstanding that the archbishop alone might have full authority to deprive.—*Cripps's Laws of the Church*, p. 100. See DEPOSITION OF A CLERGYMAN.

DEPRIVE, v. *dĕ-prīv′* [mid. L. *deprīvātus*, dispossessed of an office or dignity—from L. *de, prīvo*, I take away, I bereave]: to take away from; to bereave of a thing; to hinder from possessing or enjoying; to divest of a dignity or office. DEPRI VING, imp. DEPRIVED′, pp. *-prīvd′*. DEPRI′VER, n. one who. DEPRI′VABLE, a. *-vă-bl*, that may be deprived. DEPRIVATION, n. *dĕp′rĭ-vā′shŭn*, a taking away; loss of friends or goods; the taking away his living or office from a minister or clergyman.—SYN. of 'deprive': to bereave; strip; despoil; rob; abridge; debar; divest; hinder; prohibit; disqualify; exclude; preclude; forbid.

DE PROFUNDIS, *dē prō-fŭn′dĭs* ('Out of the depths'): first words of Psalm cxxx., which forms a portion of the lituragy of the Rom. Cath. Church, and is sung when the bodies of the dead are committed to the grave. A tender melancholy pervades the psalm, which, however, brightens at the close under the conviction that with God there is 'plenteous redemption.'

DEPTFORD, *dĕt′ford:* town on the s. bank of the Thames, about 4 m. below London Bridge, divided from Greenwich by the river Ravensbourne, a creek of deep water (*depe ford*), formerly fordable at the spot where D. Bridge now stands. It contains two parishes, St. Nicholas' and St. Paul's, the latter formed by act of parliament 1727. St. Nicholas' Deptford lies wholly in Kent, but St. Paul's extends into Surrey—the Surrey portion being known as the Manor of Hatcham. The people are engaged largely in the Royal Deptford Victualing Yard, and in extensive private ship-building and engineering establishments. The market-gardens of Deptford are famous. The upper portion of the town is well built, and is a favorite place of residence for persons in business in London. D. formerly was a part of the parliamentary borough of Greenwich, was in 1885 raised to the rank of a separate parliamentary borough, returning one member. The ancient Incorporation of the Master and Brethren of the Trinity House of 'Deptford Strond,' founded by Henry VIII., has its hall at D., and also two sets of almshouses. Queen Elizabeth, 1581, visited Drake at D., in the ship in which he 'compassed the world.' In 1698, Peter the Great acquired the art of ship-building in the dock-yard here, residing at the manor house of Sayes Court, which John Evelyn had previously occupied.

DEPTFORD DOCK-YARD—now ROYAL DEPTFORD VICTUALLING YARD: British naval establishment. It was never concerned as largely in ship-building as in other operations connected with the fitting-out of fleets. Being ill adapted for the large war-ships of the present day, the dock-yard proper was abandoned 1865, and the naval establishment limited to the victualing-yard, an important place, employing several hundred persons as officers, clerks, workmen, and hoymen. This is the chief dépôt for victualling the home and foreign stations, and the marines; also for slops (ready-made clothing) and many of the necessaries for seamen. It is convenient for these purposes, being near the metropolitan markets. The officers receive, examine, store, pack, re-issue, and register the various stores, and transmit all their accounts to the admiralty. For simplicity it used to be called collectively a royal dock-yard; but the ship-building, the store-keeping, and that very miscellaneous process called the provisioning, were the work of different establishments.

DEPTH, *dĕpth* [from DEEP, which see]: the measure of a thing from the surface to the bottom; a deep place; the sea or ocean; the middle, stillest, or inner part; abstruseness; obscurity; unsearchableness; sagacity or penetration; profoundness, as applied to writings or discourses, or to the understanding. DEPTH′LESS, a. wanting depth.

DEPUCH′ ISLAND: in the Dampier archipelago, off the n.w. coast of Australia: lat. 20° 38′ s., and long. 117° 44′ e. Though only eight m. in circuit, it is notable for some curious specimens of native sculpture found on it; also because rising with its greenstone rocks to a height of 514 ft. above the sea, it presents a remarkable contrast to the low-lying shore of the adjacent mainland.

DEPUDORATE, v. *dē-pūd′ėr-āt* [L. *de*, away; *pudor*, shame]: to render void of shame, or shameless.

DEPURATE, v. *dĕp′ū-rāt* [mid. L. *depurātus*, purified—from L. *de*, *pūrus*, pure: F. *dépurer*, to purify]: to free from impurities. DEP′URATING, imp. DEP′URATED, pp. DEP′URA′TION, n. *-rā′shŭn* [F.—L.]: the freeing from impurities; the cleansing of a wound. DEPURANT, a. *dĕp′ū-rănt* [mid. L. *depūrăn′tem*, purifying]: a medicine supposed to be capable of purifying the blood.

DEPUTE, v. *dĕ-pūt′* [F. *députer*—from L. *depŭtārĕ*, to prune, to destine or allot to—from *de*, down; *putārĕ*, to cleanse, to prune]: to allot or appoint a part to represent the whole; to appoint as an agent or substitute to act for another. DEPU′TING, imp. DEPU′TED, pp. DEPUTATION, n. *dĕp′ū-*

tā'shŭn [F.—L.]—*literally*, the parts cut off or allotted to represent the whole; the act of appointing or deputing persons authorized to act for others; a special commission or delegation appointed by a public body. DEP'UTY, n. *-tĭ*, a person appointed to act for another; a lieutenant; a viceroy. The appointment of a deputy does not free the principal from responsibility, since the deputy is not an assignee. It is a general rule, that no judge can appoint a deputy unless he be authorized to do so in the commission by which he himself is appointed. In the rare cases in which a deputy is empowered to appoint a deputy, the latter is usually called a substitute: see SHERIFF.—SYN. of 'deputy': ambassador; envoy; plenipotentiary; minister; substitute; representative; legate; delegate; envoy; agent; factor.

DE QUINCEY, *de kwĭn'sĭ*, THOMAS: 1786, Aug. 15—1859, Dec. 8; b. Manchester, England: distinguished writer. His father was a wealthy Manchester merchant, who, dying while his children were yet young, left his widow an estate of £1,600 a year. De Q. received his first education at home, and was afterward sent to the grammar school of Bath. He went to the Univ. of Oxford 1803, and remained there till 1808. At the university he made the acquaintance of opium, which was ever afterwards his dread familiar. On leaving college, he went to reside at the Lakes, formed one of the cluster of literary lights which made that region at the time so illustrious, and afterwards so memorable. He left Cumberland 1819, and in 1843 he removed to Scotland, settling with his family at the village of Lasswade, near Edinburgh. He died at Edinburgh.

With the exception of a strange episode of his youth, described in the *Confessions of an Opium-eater*, the heroine of which was, singularly enough, one of the 'waifs of womanhood,' De Q.'s career was almost entirely eventless. He led a lonely and speculative life, and his writings are at once history and autobiography. He was perhaps, with the exception of his friend Prof. Wilson, the most brilliant magazine-writer in this century of magazines. Everything that he wrote, putting aside the *Confessions*, *The Logic of Political Economy*, and a novel—which no one seems to have read, or if read, to have remembered, is in the form of articles. Even the *Confessions* themselves were originally published as a series of articles in the *London Magazine*. De Q. wrote on a great variety of subjects, and in a great variety of styles. He has written articles pervaded by humor of the most curious and novel kind, philosophical and critical articles distinguished by originality and daring of speculation, and articles of the nature of prose-poems, unquestionably the most wonderful things of their kind in English literature. In imaginative grandeur, and music and sweep of sentence, the *Suspiria de Profundis*, and the opium visions that close the *Confessions*, are miracles of impassioned prose. De Q.'s works were collected and republished first in the United States. The edition of De Q.'s works, 16 vols., includes nearly all his writings. See Page's *Life and Writings of De Q.* (1877); and Masson's *Sketch* (1881).

DERACINATE, v. *dĕ-răs'ĭ-nāt* [F. *déraciner*, to uproot —from *de;* F. *racine*, a root—from mid. L. *radicīna*—from L. *radīcem*, a root]: in *OE.*, to tear or pluck up by the roots. DERAC'INATING, imp. DERAC'INATED, pp. *-nāt-ĕd.*

DE'RAH: Egyptian measure of length, equivalent to 22·37 inches. Dry goods are sold by a D. measuring 25·50 inches. One-half of a D. is a *kadam*, one-sixth an *abdat*, one twenty-fourth a *kerat.* The D. in use at Constantinople is nearly three times the length of the Egyptian (66·34 inches).

DERAJAT, *dĕr-a-jât':* fluvial portion of Daman (q.v.); a comparatively narrow strip in the Punjab, between the Suliman Mountains and the Indus, and which, when duly irrigated, is singularly fertile. D. is so called from *dera*, a camp, a common element in the names of its towns—Dera Deen Punah, Dera Futti Khan, Dera Ghazee Khan, and Dera Ismail Khan. It is divided into three districts; total area 17,681 sq. m.; pop. (1881) 1,137,572.

Dera Deen Punah, the least considerable of the above towns, has suffered much from physical causes, having, in 1819, been nearly destroyed by an earthquake and by a simultaneous flood from the Suliman Mountains.—Dera Futti Khan is the centre of a district which produces cotton, grain of various kinds, indigo, sugar, and opium; pop. 5,000.—Dera Ghazee Khan occupies, for commercial purposes, a very favorable position—the intersection of the two great routes of the country between n. and s., and between e. and w.; hence it has been recommended as the best site for an annual fair for Sinde, the Punjab, Afghanistan, Beloochistan, and Khorassan. It manufactures cotton, silk, and steel, and has an extensive bazaar. Pop. 22,300.—Dera Ismail Khan is of recent origin, another town of the same name having been swept away by an inundation of the Indus It stands on the thoroughfare already mentioned between n. and s., commanding also two ferries across the river. To this position it is indebted for a thriving trade, and in spring particularly it is crowded by the Lohani Afghans, an enterprising tribe of pastoral pedlers. Pop. 22,000.—Besides the towns already described, D. has Isa Khel, pop. abt. 8,000, and the important commercial town of Leia (q v.).

DERANGE, v. *dĕ-rānj'* [F. *déranger*—from OF. *des*, for L. *dis*, apart; *ranger*, to set in order; *rang*, a row (see RANGE)]: to put out of its row or order; to disorder; to confuse; to disturb; to embarrass. DERANG'ING, imp. DERANGED', pp. *-rāngd':* ADJ. disordered in mind; crazy. DERANGE'MENT, n. [F.]: a putting out of order; disorder of the intellect; insanity.—SYN. of 'derange': to embarrass; displace; unsettle; disconcert; ruffle, discompose; confuse; disarrange;—of 'derangement': madness; insanity; confusion; disorder; embarrassment; irregularity; delirium; mania; lunacy; disturbance.

DERAYEH, EL: see DERREYEH, EL.

DERBEND, *dĕr-bĕnd'*, or DERBENT, *dĕr'bĕnt':* town of Russia, cap. of the govt. of Daghestan; on the w.

shore of the Caspian Sea, on the declivity of a branch of the Caucasus, which here approaches very close to the water's edge, and forms a defile known anciently as the *Albaniæ Pylæ*, now the Pass of Derbend; lat. 42° n., long. 48° 15′ e. D. is built in the form of a parallelogram, about 3 m. in length, and from a quarter to half a mile in breadth. It is surrounded by strong walls of very ancient date, further strengthened at intervals by towers. From two massive iron gates, through which the road to the interior passes, the town derives its name, which signifies 'the shut-up gates.' The harbor of D. is inaccessible to all but small boats. The manufactures of the place consist consist chiefly of coarse silk and woolen stuffs, and saffron is cultivated. D. is a very ancient place, having, as it is said, been fortified by Darius I. to prevent the incursions of the Scythians: and it was long considered the key of Persia on the n w. side. It came finally into the possession of Russia 1795. Pop. (1880) 16,552.

DERBY, *dâr'bĭ* or *dėr'bĭ* [instituted by Earl *Derby* 1780]: the principal race at Epsom, generally on the last Wednesday in May: see DERBY DAY. DERBYSHIRE NECK, *dâr'-bĭ-shĭr*, goitre, which see. DERBYSHIRE-SPAR, fluoride of calcium, or fluor-spar, which see.

DERBY, *dėr'bĭ:* town of D. township, New Haven co., Conn.; at the junction of the Naugatuck and Housatonic rivers; on the Naugatuck and New Haven, and D. railroads; 9 m. w. of New Haven, 13 m. n.e. of Bridgeport. It has extensive manufactures of brass and iron goods, paper, pins, and spectacles, and at one time had a large West India trade and noted ship building yards. A bridge across the Naugatuck river connects D. with the thrifty manufacturing village of Ansonia, and the equally prosperous village of Birmingham is in the same township and near by. In 1888 Ansonia had one national bank, cap. $200,000, and one savings bank; Birmingham, one national bank, cap. $300,000; and D., one savings bank. There were also 9 churches, 3 graded schools, and 2 weekly newspapers. Pop., town and villages (1870) 8,020; (1880) 11,650.

DERBY, *dėr'bĭ* or *dâr'bĭ:* parliamentary and municipal borough and manufacturing town, capital of Derbyshire, England, in the s. part of the county, in the wide and fertile valley of the Derwent—thence navigable to the Trent; at the junction of the main branches of the Midland railway, 132 m. n.n.w. of London, 35 m. n.n.e. of Birmingham. The dwellings are mostly of brick, and the public buildings of stone. The Free Grammar School is one of the oldest English foundations, dating 1162. Here Blackwell, author of the *Sacred Classics*, was a master, and Flamsteed a pupil. The school was removed 1862 from St. Peter's Church-yard to St. Helen's House, the site of the original foundation, and class-rooms have been added. Dr. Darwin, 1783, founded the Philosophical Soc. of D., and wrote most of his works here. D. is well situated for manufacture and trade, being at the s. end of a coal-field, and connected by canals and railways with a great part of

England. It has manufactures of silk, cotton, lace, hosiery, lead, iron, paints, porcelain, jewelry, black marble vases, columns, chimney-pieces, and ornaments of fluor-spar, petrifactions, marble, etc. The staple manufacture is throwing silk, introduced by Mr. Crochet from Italy early in the 18th c.; the silk-mill, with machinery still in use, erected 1718 by John Lombe, being the first of the kind in England. D. has about 25 silk-mills. In 1867 a new cattle-market was opened, and a new corn-exchange, and a handsome market hall was built 1866. Mr. Bass presented the town with a recreation-ground, swimming-baths, a free library, art gallery, and museum buildings. D was the Roman station *Derventio*, on the e. bank of the river, opposite the town. Roman brass, silver, and gold coins have been found, a Roman pavement, and the foundations of a Roman bridge. D.—called *Northworthige* by the Saxons, and *Deoraby* by the Danes—was given by the Conqueror to William Peverill. D. returns two members to parliament. Pop. (1871) municipal borough, 49,793; (1881) 80,410; parliamentary borough (1871) 61,381; (1881) 77,636.

DERBY, *dėr'bĭ* or *dâr'bĭ:* titular name of a distinguished family of British nobility, descended from a common family with the Barons Audley or Audleigh, county Stafford. William de Audleigh, 12th c., on exchanging with his cousin, Sir Adam de Audleigh, the manor of Talk, county Stafford, for that of Stanleigh (Stony Lea), county Derby, adopted the latter name, and continued it to all his descendants. The first who assumed the arms now used by the family—viz., ' three stags' heads on a bend '—was Sir William de Stanley, son of William de Stanley, in the reign of Henry III. The first Lord Stanley was created 1456; his eldest son Thomas was created first Earl of Derby 1485.

DERBY, EDWARD GEOFFREY SMITH-STANLEY, 14th Earl of: 1799–1869, Oct. 23; b. at Knowsley Park, Lancashire. He was educated at Eton and Christ-church, where, 1819, he gained the Latin Verse prize (subject, *Syracuse*). He was elected member of parliament for Stockbridge 1820; in 1825, he married the second daughter of the first Lord Skelmersdale; and in 1826, he represented Preston, but lost his seat 1830, on becoming chief sec. for Ireland under the administration of Earl Grey. A seat was then found for him at Windsor. He took a distinguished part in the debates in favor of the Reform Bill, and signalized his Irish administration by two bold measures—one for national education in Ireland, and another relative to the Irish Church temporalities, which resulted in ten Irish bishoprics being abolished. The grievance of church-rates and first-fruits was also removed, and a graduated tax upon benefices and bishoprics substituted. In 1833, he became sec. of state for the colonies, and in the same year carried the bill for emancipating slaves in the W. Indies, and providing a compensation of twenty millions of pounds to the planters. In 1834, alarmed by the success of Mr. Ward's motion for appropriating the surplus of the

Irish Church temporalities to secular purposes, Lord Stanley seceded from the Grey ministry, carrying with him Sir James Graham, the Duke of Richmond, and the Earl of Ripon. He ever afterward adhered to the Conservative party, although in 1834, upon the dismissal of the Melbourne ministry by William IV., he declined to join the administration of Sir Robert Peel. After acting with the opposition for seven years, he accepted the colonial seals in the Peel administration 1841, and held them for four years. In 1844, Sep., he resigned his seat for n. Lancashire, for which he had sat since 1832, and was called to the upper house in his father's barony of Stanley of Bickerstaffe. In 1845, Dec., when Sir Robert Peel determined to repeal the corn laws, he retired from the cabinet. In 1846, he put himself at the head of the protectionist opposition, which, headed in the commons by Lord George Bentinck and Mr. Disraeli, waged a stout but ineffectual opposition to the free-trade measures of Sir Robert Peel. He was now regarded as the leader of the great Conservative party. In 1851, on the death of his father, he succeeded to the earldom. In 1852, Feb., on the resignation of Lord John Russell, he was intrusted with the formation of an administration, which was displaced in Dec. following by a hostile vote of the house of commons condemnatory of the budget of his chancellor of the exchequer, Mr. Disraeli. On the death of the Duke of Wellington 1852, he was elected chancellor of the Univ. of Oxford. In 1858, Feb., when the Palmerston govt. resigned on the rejection of the Conspiracy Bill, he again became first lord of the treasury. At the meeting of parliament in the following year, D.'s government brought forward a measure of parliamentary reform. A hostile amendment having been moved by Lord John Russell, and carried, he dissolved parliament, and appealed to the country. When the new house of commons re-assembled, 1859, June, a vote of want of confidence was carried against his government, and he resigned. He returned to power in 1866, and, in conjunction with Mr. Disraeli, passed the reform measure of 1867: see REFORM. In 1868, he resigned the premiership in favor of Mr. Disraeli. His last speech in parliament was made (1869) in opposition to the disestablishment of the Irish Church. At his death he was succeeded in the earldom by his son, Edward Henry Smith-Stanley (see STANLEY). As a debater, Earl D. stood in the very first rank. His power of invective was almost unequalled, and his vehement contentions with O'Connell on the repeal of the Union and the Irish Church did much to diminish the influence of the Irish agitator. He was tall, of commanding gesture, and his voice, in elevated passages of declamation, rang with power and effect. D. gave the leisure of his latter years to translating Homer's *Iliad*, in blank verse (2 vols. 1864).

DERBY DAY, in England: second day of the horse-races, the Wednesday of the 'Summer Meeting,' which takes place at Epsom in Surrey, usually at the end of May, but sometimes early in June. Upon this day, the most important on the list, and that on which the best horses run, the famous Derby stakes, instituted by the Earl of Derby, 1780, and which consist of 50 sovereigns each, are contended for. When the first Derby was run for, there were only 36 subscribers at 50 guineas each (with £25 forfeit in case of non-starters); but the number of subscribers is now so large, that the value of the stakes sometimes amounts to more than £6,000. The Derby Day is the great English holiday. To be present at Epsom on that occasion, London empties itself, and proceeds to the Downs by modes of locomotion the most heterogeneous. For hours, a continuous stream of carriages, gigs, dog-carts, vans, and vehicles of every description, moves tumultuously along the road to Epsom. Shopkeepers on that day shut up their shops, the benches of parliament are deserted, one-half of the aristocracy appear on the ground, people of every condition arrive in countless numbers from all districts; and huge trains arrive every few minutes at the station, bringing their thousands, until the entire Downs are covered with a vast moving mass. So great is the demand for conveyances on this day, that scarcely a horse can be had either in London or within 40 miles of it. At the Derby 1861, the course, a mile and a half in length, was gone over in 2 minutes 43 seconds—the swiftest running, by two seconds, yet known on that course.

DER'BŸITES: see PLYMOUTH BRETHREN.

DERBYSHIRE, *dėr'bĭ-shėr* or *dâr'-*: inland co. of England, between Yorkshire on the n. and Leicestershire on the s.; triangular in form; the greatest length from n. to s. 56 m.; greatest breadth, 34; 1,030 sq. miles. The n.w. is occupied by the s. end of the Pennine chain, called the High Peak or Derbyshire Highlands. This tract forms the watershed between the Trent and Mersey, and is not surpassed in England for rugged and romantic scenery; abounding in precipices, faults, rocking-stones, caverns—one of which is 2,700 ft. long—and streams that lose themselves for a time among the fissures of the limestone hills. The Peak is 1,880 ft. high; Kinderscout 1,981 ft. From the Peak tract, a range runs s.; another runs 60 m. s.s.e. Other ranges intersect parts of the county. To the south, D. sinks into a flat or gently undulating tract of new red sandstone, with some spots of magnesian limestone and coal, and beds of red marl and gypsum. The chief rivers are the Trent—dividing D. from Staffordshire for 10 m., then crossing the south of the county and passing into Nottingham—and its tributaries, the Derwent and the Dove, both of which rise in the region of the Peak, and flow s.east. Warm mineral springs are at Buxton and Matlock, and intermitting springs at Barmoor and Tideswell. D. is celebrated for metals and minerals—iron, lead, zinc, manganese, copper, coal, fuller's earth, mineral caoutchouc and mineral oil, gypsum, pipeclay and chert for potteries, marble, fluor-spar, and alabaster for ornaments, etc. D. has six canals, and is intersected by many branches of the Midland railway. In the n., the climate is cool and moist, with fogs, and often frosty in summer. D. is more a manufacturing and mining than an agricultural county. The best soils in the south are red, marly, fertile loams. There are many woods and coppices. The chief crops are wheat, barley, and oats. The total acreage under crops of all kinds, bare fallow, and grass, (1881) was 512,334. D. has much permanent pasture, large dairies, and sheep-pasturage in the Peak district. There are manufactures of cotton, silk, worsted, metallic goods, porcelain, and marble and spar ornaments. D. is divided into 6 hundreds, 9 poor-law unions, and 140 parishes in the diocese of Lichfield. The chief towns are Derby, Ashbourne, Bakewell, Buxton, Chapel-le-Frith, Chesterfield, Belper, and Wirksworth. There are in the county remains of so-called Druid circles, barrows, cromlechs, British and Roman roads, Roman baths, and a Roman altar at Haddon Hall. There are also ecclesiastical and monastic remains. Repton Church crypt dates before 874. Hardwick Hall contains some furniture of Elizabeth's time, and some embroidery said to have been done Mary Queen of Scots. Near Bakewell is Chatsworth, the magnificent seat of the Duke of Devonshire. Arkwright built his first mill at Cromford 1771. D. returns 9 members to parliament, of which 2 are for Derby. Pop. (1871) 380,538; (1881) 461,914.

DERCETIS, n. *dėr'sĕ-tĭs* [L. *Dercĕtis*, a Syrian sea-goddess]: in *geol.*, a ganoid eel-like fish of the chalk formation.

DERCETO: see DAGON.

DERECSKE, *dā-răch'kā:* town of Hungary, 12 m. s. of Debreczin; in the vicinity of several small lakes, from which, in the summer-time, considerable soda is obtained by evaporation. In one of the lakes, small but very beautiful pearls are found. Pop. (1880) 7,630.

DEREHAM, EAST, *dēr'am:* town in the middle of the county of Norfolk, England, 16 m. w.n.w. of Norwich. Its streets are wide, well lighted, and well paved. The church, cruciform, with a tower, contains the remains and monument of Cowper the poet. D. has manufactures of agricultural machines, and in the highly cultivated country around are many gardens and orchards. Here Withburga, daughter of King Anna, founded a nunnery in the 7th c., which was burned by the Danes, and afterward refounded. Withburga was buried in her nunnery 654, but her remains were stolen thence by the monks of Ely in 974. Pop. (1881) 5,640.

DERELICT, a. *dĕr'ē-lĭkt* [L. *derĕlic'tus*, forsaken—from *de*, *relictus*, left behind]: forsaken entirely; left; abandoned: N. in *law*, goods thrown away or abandoned by the owner; a tract of land left dry by the sea, and fit for cultivation or use; a ship abandoned at sea. DER'ELIC'TION, n. *-lĭk'shŭn*, complete abandonment; the act of leaving or forsaking; state of being abandoned; desertion.

DER'ELICT, in Law: anything forsaken or left, or wilfully cast away.

That a ship which has been wrecked may be deemed derelict, it is necessary that the master and crew shall have abandoned her, without hope of recovery. The mere quitting of a ship for the purpose of procuring assistance from the shore, or other temporary cause, with the intention of returning to her again, is not an abandonment. When true abandonment or dereliction has occurred, the first comers are entitled to take temporary possession of the ship, and to claim salvage, either from the owners or others having right to wrecks unclaimed by the owners. In English law, the general superintendence of all matters relating to wreck is placed in the Board of Trade, and the board may appoint any officer of customs, or of the coastguard, or other person, to be a receiver of wreck in any district.

The principle upon which Salvage (q.v.) it given on wrecks and derelict is, that a person who by his labor preserves goods which the owner or those intrusted with the care of them have either abandoned in distress at sea, or are unable to protect and secure, is entitled to retain the possession of the goods until proper compensation is made to him for his trouble. Where the parties cannot agree on this sum, and are unwilling to adopt the decision of the justices the amount is usually ascertained by a jury. Till the question is decided, the goods remain in the custody of the salvor, or of the receiver for his behoof. No claim for salvage is due where the owner, or those in his employment, are at hand on the coast, and in a condition to save and protect his property. If any one set of persons have taken possession of a derelict, and are endeavoring to bring it into port and save it, another set have no right to interfere with them and become participators in the salvage; unless it appears that the first in possession would not have been able to effect the rescue of the property without the aid of the others (Abbot, p. 490). This rule applies to govt. officers, even where the property saved belongs to the government. The original salvors cannot be dispossessed without reasonable cause. As to the proportion which the salvage allowed bears to the value of the property saved in various circumstances, see SALVAGE.

DERG, LOUGH, *loċh dĕrċh* (signifying the *red lake*): lake in Ireland, largest lake expansion of the river Shannon, between Tipperary on the s.e., and Galway and Clare on the n.w.; 24 m. long from n.e. to s.w., 2 to 6 m. broad, 10 to 20 ft. deep at the upper, and 50 to 80 ft. at the lower end. Its surface is about 100 ft. above the sea. It contains several islands.

DERG, LOUGH: lake in Ireland, in the s. of Donegal county, on the borders of Tyrone. It is 3 m. long, and 2½ m. wide, has many small isles and rocks, and wild dreary shores, and is surrounded by mica-slate hills 700 to 1,200 ft. high. Saint's Isle contains the remains of a priory, founded about 600, and is the original seat of St. Patrick's Purgatory. But the place of penance has for some centuries been on Station Isle—less than an acre in extent, and with two chapels—which is now the most celebrated place of pilgrimage in Ireland, 10,000 to 15,000 persons flocking to it annually, from June 1 to Aug. 15, for prayer, fasting, and vigils.

DERIDE, v. *dĕ-rīd′* [F. *dérider*—from L. *deridērĕ*, to laugh to scorn—from *de*, *ridērĕ*, to laugh: It. *deridere*]: to laugh at in contempt; to mock. **DERI′DING**, imp. **DERI′DED**, pp. **DERI′DER**, n. one who. **DERI′DINGLY**, ad. *-lĭ*. **DERI′SION**, n. *-rĭzh′ŭn* [F. *dérision*—from L. *derisiōnem*—from *derīsus*, mockery, scorn]: the act of laughing at in contempt; mockery; ridicule; scorn. **DERI′SIVE**, a. *-rī′sĭv*, mocking; ridiculing. **DERI′SIVELY**, ad. *-lĭ*. **DERI′SIVENESS**, n.—SYN. of 'deride': to ridicule; taunt; banter; insult; laugh at; rally; scoff at;—of 'derision': ridicule; scorn; mockery; insult.

DERIVA′TION, in Medicine: method of curing disease, whose theory was formerly that the *materies morbi*, or matter of the disease, was drained away through some channel established for it by artificial means, as when a blister is applied over an inflamed lung, or a discharge from the bowels established in a case of dropsy. Without too closely scrutinizing the theory, it may be admitted that many of the practices formerly founded on it have been found useful in experience, and are well established in modern medicine.

DERIVE, v. *dĕ-rīv′* [F. *dériver*, to turn off, as a stream—from L. *derivārĕ*, to draw off, to divert—from *de*, *rīvus*, a stream: It. *derivare*]: to draw from, as from a regular course or channel; to receive, as from a source or origin; to deduce, as from a root or primitive word; to trace. **DERI′VING**, imp. **DERIVED′**, pp. *-rīvd′*. **DERI′VABLE**, a. *-rī′vă-bl*, that may be derived. **DERI′VABLY**, ad. *-vă-blĭ*. **DERIVA′TION**, n. *dĕr′ĭ-vā′shŭn* [F.—L.]: the act of drawing or receiving from a source; that which is derived or deduced; the tracing of a word from its root (see ETYMOLOGY). **DERIVATIVE**, a. *dĕ-rĭv′ă-tĭv*, taken or formed from another; secondary: N. a word formed from another word, or which takes its origin from a root; not fundamental. **DERIV′ATIVELY**, ad. *-lĭ*. **DERIV′ATIVENESS**, n.—SYN. of 'derive': to trace; infer; draw; flow; proceed.

DERM, n. *dėrm*, or **DERMA**, n. *dėr′mă*, and **DERMIS**, n. *dėr′mĭs* [Gr. *derma*, skin, *dermătos*, of skin: F. *derme*]: the true skin; the integument which covers animal bodies (see SKIN). **DER′MAL**, a. *-măl*, pertaining to the skin. **DER′MATOL′OGY**, n. *-mă-tŏl′ŏ-jĭ* [Gr. *logos*, discourse]: science of the skin and its diseases (see SKIN). **DER′MATOL′OGIST**, n. one who. **DERMOID**, a. *dėr′moyd*, or **DER′MATOID**, a. *-mă-toyd* [Gr. *eidos*, likeness]: resembling the skin. **DERMALGIA**, n. *dėr-măl′jĭ-a* [Gr. *algeō*, I feel pain]: neuralgia of the skin. **DERMO-SKELETON**, the hard integument which covers many animals, and affords protection to their soft parts, making its appearance as a leathery membrane, or as shell, crust, scales, or scutes. **DERMANEURAL**, a. *dėr′ma-nūr-al*, or **DERMONEURAL**, a. *dėr′mō-* [Gr. *neuron*, a nerve]: term applied to the upper row of spines in the back of a fish, from their connection with the skin, and their relation to tha surface of the body on which the nervous system is placed. *Note.*—Derma or Dermis is the true skin, sentient and having a vascular texture; *epidermis* or *cuticle* is the non-vascular tissue covering the dermis.

DERMAPTERA, n. plu. *dėr-măp'tėr-a* [Gr. *derma*, skin; *pteron*, a wing]: an order of insects separated from the *Orthoptera* of Latreille, and restricted by Kirby to the earwigs: see Earwig.

DERMATOPHYTES, *dėr-măt'o-fīts* [Gr. *derma*, the skin; *phyton*, a growth or plant]: vegetable growths, chiefly of the lowest of Cryptogamia (q.v.), inhabiting the cuticle or epidermis, and giving rise to some forms of skin-disease, as Favus (q.v.), Pityriasis (q.v.), Ringworm (q.v.), etc.

Bacon Beetle. (*Dermestes lardarius.*)

DERMESTES, *dėr-mĕs'tēz:* genus of coleopterous insects of the section *Pentamera*, and family *Clavicornes* (q.v.); having antennæ shorter than the thorax, their three terminal joints forming an ovate compressed club. Their larvæ feed mostly on dry and decaying animal matter, and are very voracious, committing great ravages among furs, collections of natural history, etc. *D. lardarius* is the well-known Bacon Beetle, the larva of which is so often destructive to bacon and other dried meats, and to cheese. The perfect insect is about a quarter of an inch in length, and of a dull black color, the base of each wing-cover ash-colored with three black spots. The larva is of a long shape, tapering towards the tail, dark-brown above, white beneath, with long hairs, and furnished with two horny hooks on the last segment. The larva of *D. murinus* is common in the dried carcasses of vermin nailed up on doors by gamekeepers; that of *D. vulpinus* abounds among cargoes of hides brought from warm climates; that of *D. paniceus* in long-kept stores of ship-biscuits.

Use is sometimes made of the larvæ of species of D. for procuring well-cleaned skeletons of birds and other small animals: the animal is first soaked in water, to get all the blood out; then dried, to suit it to the taste of the larvæ, which are placed with it in a covered box; and in a short time their work is very neatly and completely done, much better than by ants.

DERMOBRANCHIATA, n. plu. *dėr-mō-brang-kĭ-ā'ta* [Gr. *derma*, the skin; *branchia*, gills]: family of gasteropods or snails, the external branchiæ or gills of which occur in the form of thin membranous plates, tufts, or filaments; called also *Nudibranchiata* (q.v.). Dermobran'chus, n. *-kŭs*, genus of mollusks, the branchiæ or respiratory organs of which consist of ramified skin.

DERMOPTEROUS FISHES, *dėr-mŏp'tėr-ŭs* [Gr., skin-finned fishes]: an order in Owen's classification, named from the cutaneous vertical fins, in which the rays are extremely soft and delicate, or altogether imperceptible, and further characterized by the want of pectoral and ventral fins. Lampreys, the lancelet, etc., are dermopterous fishes.

DERMOSCLERITES, n. plu. *dėr-mŏs'klĕr-ī'tēz* [Gr. *derma*, skin; *sklēros*, hard]: masses of spicules found in the tissues of some of the Alcyonaria.

DERN, n. *dėrn* [AS. *dearn*, secret, hidden (see DEARN)]: in *OE.*, secret; sad; melancholy. DERNLY, ad. *dėrn'lĭ*, secretly; sadly.

DERNA, or DERNAH, *dėr'na:* town of Tripoli, n. Africa, at the mouth of a ravine a mile from the Mediterranean; about lat. 33° 30′ n., long. 22° 30′ e. Built on both sides of the ravine, it has regular streets, which are far from cleanly, although a copious stream of pure water flows through several of them. The houses are low, and have a mean appearance, but they are surrounded by fine gardens and orange-groves. The harbor of D. is insecure, and its prosperity, formerly considerable, has greatly declined. Pop. 6,000.

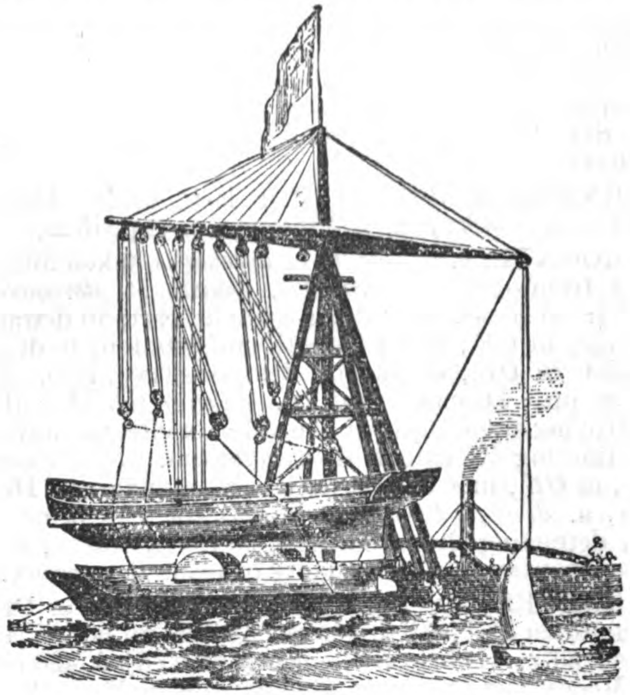
DERNIER, n. *dėr'nĭ-ėr* [F.]: last; final. DERNIER RESSORT, n. *-rĕ-sŏrt'*, the last resource or expedient.

DEROGATE, v. *dĕr'ō-gāt* [L. *derogātus*, taken away, detracted from—from *de*, *rogātus*, asked: It. *derogare:* F. *déroger*]: to lessen by taking away a part; to detract; to disparage; in *OE.*, to act beneath one's station; to degenerate: ADJ. in *OE.*, degraded. DER'OGATING, imp. DER'OGATED, pp. DER'OGA'TION, n. *-gā'shŭn* [F.—L]: the act of destroying or taking away the value or effect of anything, or of limiting its extent; disparagement. DER'OGATELY, ad. *-lĭ*, in *OE.*, in a manner to lessen reputation. DEROGATORY, a. *dĕ-rŏg'ă-tėr-ĭ*, that lessens the extent, effect, or value; detracting; humiliating. DEROG'ATORILY, ad. *-lĭ*. DEROG'ATORINESS, n. the quality of being derogatory.

DERREYEH, EL, or DERAYEH, *ĕl de-rī'ĕh*, or DEREYEEYAH: town of Nedjed, central Arabia: in lat. 25° 15′ n., long. 46° 30′ e. It is near the centre of Nedjed, 430 m. n.e. from Mecca, and stands in a valley abt. half a mile wide, filling its whole breadth, and is fortified. Pop. usually stated abt. 15,000. It was formerly the capital of the country of the Wahabees, but was captured after a siege of seven months, and almost destroyed by Ibrahim Pasha 1819. See WAHABIS.

DERRIAS, n. *dėr'rĭ-as* [an Abyssinian word. Hemprech writes it *Karrai*]: a baboon, *Cynocephalus Hamadryas*, found in Arabia and Abyssinia. The Arabic name is Robah or Robba. Though not now found in Egypt, it is sculptured on the monuments of that country.

DERRICK, n. *dĕr'rĭk* [comp. Gael. *dirich*, to climb, to hoist: said also to be from an abbreviation (*Dietrick*) of *Theodoric*, famous hangman at Tyburn, England, 17th c.]: a mast or spar supported at the top by stays, with suitable tackle for raising heavy weights. The D. has been improved in size, strength and mechanism, and is able to raise a body of 1,000 tons in weight. The *Great Floating Derrick*, built by the Thames Iron Ship-building Co., at Blackwall, England, 1859, the invention of Mr. Bishop of the United States, shows the powers and principles of this contrivance as applied to transport the masses which it lifts. It consists of a flat-bottomed vessel, 270 ft. long, 90 ft. across the beam, and is divided throughout into a number of water-tight compartments, which can be filled, so as to counterbalance any weight on an opposite side. From the deck of this floating steam-crane rises an iron tripod 80 ft. high, on the top of which revolves a gigantic boom, 120 ft. long, and above the boom the 'king-post,' a continuation of the tripod, rises to the height of 50 ft. One arm of the boom is furnished with ten fourfold blocks; the chains attached to these blocks are passed across the king-post, brought over the other arm of the boom, and so descend to the other side of the vessel, where they are connected with two powerful steam-engines, by means of which the weights are raised. This derrick is capable of being propelled by means of a series of bucket-paddle floats at the rate of four m. an hour. Derricks have been long in use in the United States, and have proved much more expeditious and economical than any other species of lifting power. They are used chiefly for lifting machinery or other great weights, and for raising wrecks. A *Derrick-crane* has a jib fitted with a joint at the foot, and a chain instead of a tension-bar at the top.



DERRY: see LONDONDERRY.

DERVISH, or DERVIS, or DERVISE, n. *dėr'vĭs* [Persian, *derwesch* or *darvish*, poor]: Mohammedan priest, or monk of great austerity, and professing poverty; corresponding to the

Arabic *Fakir* (q.v.). The dervishes are divided into many different brotherhoods and orders. They live mostly in well-endowed convents, called Tekkije or Changah, and are under a chief with the title of a Sheik, i. e., 'elder.' Some of the monks are married, and allowed to live out of the monastery, but must sleep there some nights weekly. Their devotional exercises consist in meetings for worship, prayers, religious dances, and mortifications. As the convent does not provide them with clothing, they are obliged to work more or less.

It is not known when these religious orders took their rise. From the earliest times, pious persons in the East have held it to be meritorious to renounce domestic and social life, and to devote their thoughts in poverty and retirement to the contemplation of God. In this sense, poverty is recommended by Mohammed in the Koran. Tradition refers the origin of these orders to the earliest times of Islam, and reports the caliphs Abubekr and Ali as founders of such brotherhoods; but it is probable that they arose later. Many Mohammedan princes and Turkish sultans have held dervishes in high respect, and bestowed rich endowments on their establishments; and they are still in high veneration with the people. The orders are generally named after their founders, and the best known are the *Bestamis*, established A.D. 874; *Kadris*, 1165; *Rufaji*, 1182; *Mevelevis*, 1273; *Nakshibendis*, 1319; *Bektashis*, 1357; *Rushenis*, 1533; *Shemsiss*, 1601; and *Jemalis*, 1750. The kadris are commonly known in the West as 'the howling dervishes,' from the excited chant of their religious services; the 'dancing dervishes' are the Mevelevis.

Dancing Dervishes.

DERWENT, *dėr'wėnt:* one of the principal rivers of Tasmania, issues from Lake St. Clare, in the centre of the island; flows tortuously s.e.; and enters Storm Bay, in D'Entrecasteaux Channel, by an estuary four m. wide. Up to Hobart-Town, the D. is navigable for ships of any burden.

DERWENTWATER, *dėr'wĕnt-waw-tėr*, or KESWICK LAKE, *kĕz'wĭk* or *kĕz'ĭk*: oval sheet of water in the south of Cumberland, England; one of the most beautiful lakes of that county. It stretches s. from Keswick, is 3 m. long by 1½ broad, 72 ft. deep, and 222 ft. above the sea. Its banks are rocky and abrupt, and behind them rise rocky hills, one of which, the Cat Bells, is 1,448 ft high; another, Lowdore, has a waterfall of 100 ft. This lake is an enlargement of the Derwent river, which runs through it in its course to the Irish Sea, at Workington. The lake has several wooded isles, besides a remarkable floating isle—a mass of earthy matter six ft. thick, and varying in size in different years from an acre to a few perches, covered with vegetation, and full of air-bubbles, which buoy it on the surface of the water. D. abounds in trout, pike, perch, and eels.

DERWENTWATER, JAMES, Earl of: 1688–1716, Feb. 24: one of the leaders in the rebellion of 1715, and the last earl of D.; descendant of an ancient Northumberland family named Radcliffe. He was educated in France, and on the death of his father 1705, D., then in his 17th year, returned to the seat of his ancestors at Dilston, Northumberland, and assumed the paternal titles and estates. On the eve of the insurrection, at the close of 1714, warrants were issued on suspicion against several gentlemen in the north of England, and one, among others, against the earl of D.; but having been previously warned, he fled from Dilston, and found refuge in the cottage of one of his dependents. He soon afterward collected a few retainers, and placed himself at their head, under the impression that the entire body of the Jacobites either had risen, or were about to rise. From this period the history of the earl of D. becomes the history of the rebellion of 1715, which ended in the disastrous encounter at Preston, on which occasion D. conducted himself with the utmost heroism, but, with the most of the rebel leaders, was taken prisoner, and conveyed to the Tower of London. Having been impeached of high treason at the opening of parliament, he was carried before the house of lords 1716, Feb. 9, and, requesting time to prepare an answer to his accusation, was remitted till Feb. 19, when, being taken for trial to Westminster Hall, he pleaded guilty, and threw himself upon the mercy of the king. His appeal was unavailing, and he was condemned to suffer. Every possible effort was made in vain by the relations and friends of D. to obtain a pardon. He was beheaded on Tower Hill. His youth, his invariable amiability of temper, his rank, and his bravery, excited great sympathy.

DERZAWIN, *dĕr-zâ'vĭn*, GABRIEL ROMANOWICZ: 1743, July 3—1816, July 6; b. Kasan: Russian lyric poet. He studied at the gymnasium of his native city, and in 1762 entered the army as a private soldier. His talents and education soon procured him promotion. The empress Catharine highly esteemed him; and in 1791 appointed him sec. of state, in 1800 imperial treasurer, and in 1802 minister of justice. After holding the last office one year, he retired on a pension, and devoted the remainder of his life wholly to the muses. D. is a thoroughly original poet, He excels in loftiness of idea, purity of sentiment, and rich vigor of language; in fact, the latter quality at times manifests itself in an Oriental extravagance of imagery which the colder fancy of the west fails to appreciate. D.'s noblest, as well as his most popular ode, is his *Address to the Deity*. It has been translated into English, German, and other European languages. His collected works were first published at St. Petersburg in 5 vols. (1810–15), and have been often reprinted.

DESAGUADERO, *dā-sâ-gwâ-thā'rō:* table-land lying between the Oriental and Occidental Cordilleras of the Andes; 400 m. long, 30 to 80 m. wide; extending from the peak of Potosi to that of Vilcañota; one-third within the territory of Peru, the remainder in Bolivia; area, 150,000 sq. m. It has an average elevation of 13,340 ft. above sea level; is watered by the great Lake Titicaca, 12,846 ft. above sea-level, Lake Aullagas, D. river, which connects them, and a smaller lake; contains the rich silver mines of Corocoro, the gold of the Nevada de Illimini, tin of Oruro, valuable mountain veins of copper and other minerals, and thermal springs at Urimiri and Mochacamarca, and is inhabited chiefly by Incas and Aymaras; and yields an abundance of costly guanaco, alpaca, llama, and vicuña wool.

DESAGUADERO, *dā-sâ-gwâ-thā'rō:* lake in Araucania (q.v.), S. America; 35 m. in length, average breadth five m.: from it flows the Osorno to the Pacific.

DESAGUADERO: river of the Argentine Confederation. It separates the depts. of San Luis and Mendoza; but is merely a winter torrent, dried up in summer.

DESAGUADERO: river of Bolivia—the only stream of any magnitude wholly within its borders—issues from Lake Titicaca, and, after a course of 190 m., loses itself in the land-locked lake of Aullagas, near the town of Oruro. It is, without exception, the loftiest considerable stream on either continent; for the elevation of its source, not greatly exceeding that of its mouth, is 12,846 ft., or nearly 2½ miles.

DESAIX DE VEYGOUX, *dėh-zā' dėh vā-gô'*, LOUIS CHARLES ANTOINE: 1768, Aug. 17—1800, June 14; b. St. Hilaire-d'Ayat, in Auvergne: general of the first French republic. After studying at the military school of Effiat, he was appointed 1792 aide-de-camp to Prince Victor de Broglie, then at the head of the army of the Rhine. Here D. distinguished himself by bravery. In 1796, Moreau, having obtained the command of the army of the Rhine, made D. his lieutenant, and employed him in the most difficult and dangerous missions. In Moreau's (q.v.) famous retreat through the Black Forest during this year, D., who commanded the left wing of the army of the Rhine. increased his already great reputation. The French by this retreat had now retired within the Rhine, retaining on the right bank only the fort of Kehl, which D. was commissioned to defend. The fort was in ruins, and could not be well repaired before the approach of the Austrians; nevertheless, behind this imperfect defense D. resisted the Austrian army for more than two months, only capitulating 1797, Jan., when his ammunition was spent. His greatest achievement, however, was the conquest of Upper Egypt, 1799, after an eight months' campaign. He was incredibly fertile in resources, and had the power of winning and restraining the people whom he had conquered; his own soldiers used to compare him to Bayard, while the inhabitants named him *The Just Sultan*. D. returned from Egypt in time to take part in the battle of Marengo, 1800, in which he was killed by a musket-bullet. His body was placed—after being embalmed—in the convent of Mount St. Bernard. A statue has been raised in his honor in the Place Dauphine, in Paris.

DE SANCTIS, *dā sânk'tēs*, LUIGI: 1808, Dec. 31—1869, Dec. 31; b. Italy: reformer. He received a classical and theological education, became a Rom. Cath. priest, and held a professorship of theology in Rome several years. In 1847, he renounced the Roman faith and became one of the leaders in the Protestant movement, established the Prot. periodical *Eco della Verita*, and published many treatises against the teachings and conduct of the Rom. Cath. Church, which were translated into several languages and widely distributed, and in 1868, was appointed prof. of theology in the Waldensian Seminary in Florence.

DESAULT, *dė-zō'*, PIERRE JOSEPH: 1744, Feb. 6—1795, June 1; b. Magny-Vernais, France: surgeon. His parents undertook to educate him for the priesthood, but yielded to his inclination to study surgery and sent him to the Belfort military hospital. He there applied himself specially to gunshot and sword wounds, and prepared an annotated and illustrated translation of Borelli's *De Motu Animalium*. When 20 years old he went to Paris and opened an anatomical school that soon became popular and profitable. In 1776, he became a member of the College of Surgeons, and was afterward appointed chief surgeon to the college hospital, La Charité, and to the Hôtel-Dieu, and consulting surgeon to St. Sulpice hospital. He attended the dauphin during his imprisonment in the Temple and there contracted a fatal illness. He was considered the most skilful surgical operator in France, had a large private practice, and was author of many published treatises, in *Œuvres Chirurgicales*, 3 vols. 8vo (1798–9).

DES BARRES, *dā bâr'*, JOSEPH FREDERICK WALLET: 1772–1824, Oct. 24; b. England: hydrographer. He graduated at the Royal Milit. College, Woolwich, 1756, was commissioned a lieut. in the army, and sent to America for service. Immediately after his arrival he recruited a corps of field artillery in Penn. and Md., and commanded it till a battalion of regulars was sent over from England. He achieved his first distinction as an engineer in the expedition against and siege of Louisburg 1758; was an aide to General Wolfe at the siege of Quebec, and while reporting received the mortally wounded commander in his arms; made a chart of St. Lawrence river for milit. uses; and had charge of the engineering operations for the defense of Quebec and the reduction of several French strongholds 1760; and was engineer-in-chief of the expedition that recaptured Newfoundland, 1762. He prepared plans for a series of milit. posts throughout the American colonies, surveyed the coast of Nova Scotia 1763–73, made charts of the n. Atlantic coast, was appointed gov. of Cape Breton and milit. commander of Prince Edward Island 1784, and lieut. gov. and commander-in-chief of the island province, 1804. He published his charts of the n. Atlantic coast. *The Atlantic Neptune*, in 2 vols. (London 1777), and *Cape Breton* (London 1804).

DESCANT, n. *dĕs'kănt* [OF. *descant* or *deschant*—from OF. *des* for L. *dis*, apart; *canto*, I sing: Sp. *discantar*, to chant, to quaver upon a note: It. *discantare*, to disenchant]: a song or tune composed in parts (sometimes *discant*); the counterpoint or melody which the singer (taking the upper part) sang extempore to the tenor or bass; in *modern music*, the part for the voices of females or boys, i.e. treble or soprano. The word denotes also a discussion; a discourse; a series of comments: V. *dĕ-skănt'*, to sing in parts; to discourse; to remark or comment on freely. **Descan'ting**, imp. **Descan'ted**, pp. **Descan'ter**, n. one who.

DESCARTES, *da-kârt'*, RENE (Latinized RENATUS CARTESIUS): 1596, Mar. 31—1650, Feb. 11; b. La Haye in Touraine, France: metaphysician. He was sent at the age of eight years to the Jesuit College at La Flèche, where he soon became distinguished for keenness of intellect, and made great progress in languages, mathematics, and astronomy. It was not long, however, before he became dissatisfied with the doctrines and method of scholasticism, and felt it impossible to acquiesce in what had hitherto been regarded as *knowledge*. The first thing that he did after leaving college, as we are informed in his treatise on Method, was to abandon books, and endeavor to efface from his mind all that he had hitherto been taught, that it might be free to receive the impressions of truth, whencesoever they should come. In pursuance of his plan, he resolved to travel, and soon entered the army as a volunteer, serving successively in Holland and Bavaria. As, however, the life of a soldier contributed little to his main object, he quitted the army 1621; and after making journeys in different directions, he at last retired to Holland, where he prepared most of his works, attracted many disciples, and at the same time became involved in several learned controversies, especially with the theologians. Though he loved independence, yet in 1649 he accepted an invitation to Sweden, addressed to him by Queen Christina, who desired his learned intercourse and instruction. His willingness to leave Holland was occasioned partly by his anxiety to escape from the hostility of his enemies. Only a few months after his arrival at the court of Queen Christina, he died. Sixteen years later, his body was brought to Paris, and buried in the church of St. Genevieve-du-Mont.

The grand object toward which D. directed his endeavors, was the attainment of a firm philosophical conviction. The way whereby he sought to attain this end, is explained in the Discourse on Method (*Discours de la Méthode*, 1637). This small, but extremely interesting and important treatise, contains a history of the inner life of the author, tracing the progress of his mental development from its commencement to the point where it resulted in his resolution to hold nothing for true until he had ascertained the grounds of certitude. The author also, in the same treatise, explains the practical rules whereby he resolved to be guided while in this state of *suspended belief*, and by the observance of which he hoped to arrive at *absolute certainty*, if, indeed, it were at all attainable. The results of his inquiries, so conducted, he exhibited more particularly in *Meditationes de Primâ Philosophiâ* (Amst. 1641), and *Principia Philosophiæ* (Amst. 1644). In the former of these treatises, the independence of his thinking is strickingly brought out by his commehcing his Meditations with the expressions of doubt with regard to all that had thitherto borne the name of knowledge. After examining thoroughly, as he thought, the grounds of certitude in the various departments of knowledge, he found one, and only one proposition that seemed to him to stand the test, and of which the truth could not possibly be doubted: that proposition was, that he existed, which he inferred from the fact of his possessing consciousness. He could not doubt that he felt and thought, and therefore he could not doubt that *he*, the feeler, the thinker, existed. This relation between consciousness and existence he expressed by the memorable words: *Cogito ergo sum*. Instead, however, of making the above proposition the foundation of his philosophy, by which he would have been led into a direction similar to that of Kant or Fichte, he employed it only so far as to ascertain from it the criterion of certitude—viz., that whatever is *clearly and distinctly thought, must be true*. Among these clear and distinct thoughts, he soon recognized the idea of God as the absolutely Perfect Being. This idea, he reasoned, could not be formed in our minds by ourselves, for the imperfect can never originate the perfect; it must be *connate*, i.e., part of the original structure of our understanding, and implanted there by the Perfect Being himself. Hence, from the existence of the idea of perfection, D. inferred the existence of God as the originator of it; he inferred it also from the mere *nature of the idea*, because the idea of perfection involves existence. But if God exist, then we have a guarantee of the previously determined ground of certitude, for God the Perfect Being cannot deceive, and therefore whatever our consciousness clearly testifies, may be implicitly believed.

The most general fundamental principle of the philosophical system of D., is the essential difference between spirit and matter—between the thinking and the extended substances—a difference so great, according to D., that they can exert no influence upon each other. Hence, to account for the correspondence between the material and spiritual phenomena, he was obliged to have recourse to a constant co-operation (*concursus*) on the part of God; a doctrine which gave rise subsequently to the system called Occasionalism (q.v.), the principle of which was, that body and mind do not really affect each other, God being always the true cause of the apparent or occasional influence of one on the other. This doctrine received its complete development in the pre-established harmony of Leibnitz: see LEIBNITZ.

D. did not confine his attentions to mental philosophy, but devoted himself systematically to the explanation of the properties of the bodies composing the material universe. In this department, his reforms amounted to a revolution, though many of his explanations of physical phenomena are purely *a priori*, and certainly absurd. His corpuscular philosophy—in which he endeavored to explain all the appearances of the material world simply by the motion of the ultimate particles of bodies—was a great advance on the system held till that time, according to which special qualities and powers were assumed to account for every phenomenon. It was in mathematics, however, that D. achieved the greatest and most lasting results; and, indeed, his mathematical discoveries procured among his contemporaries, for his many wild philosophical views, a greater importance than they in themselves are entitled to. It was D. who first recognized the true meaning of the negative roots of equations; and to him is due the theorem, called by his name, that an equation may have as many positive roots as there are changes of sign in passing from term to term, and as many negative roots as there are continuations of sign, and not more of either kind. He gave a new and ingenious solution of equations of the fourth degree; and first introduced *exponents*, and thereby laid the foundation for calculating with *powers*. He showed, moreover, how to draw *tangents* and *normals* at every point of a geometrical curve, with the exception of mechanical or transcendental curves; and what perhaps was his best work, he showed how to express the nature and the properties of every curve, by an equation between two variable co-ordinates; thus, in fact, originating *Analytical Geometry*, which has led to the brightest discoveries. D. was less happy in his cosmological exercitations, in which he attempted to explain the movements of the heavenly bodies by *vortices* (*tourbillons*), consisting in the currents of the ether which he supposed to fill the universe; a theory which not only then, but even after the discoveries of Newton, made great commotion, and found many adherents, but has long been consigned to oblivion. The philosophical and mathematical works of D., composed in Latin, were published at Amsterdam (9 vols. 4to 1692–1701, also 1713), and at Paris (1724–26, 13 vols. 12mo). More recently, an edition of his whole works has been published by M. Cousin (11 vols., Paris 1824–26).

DESCEND, v. *dĕ-sĕnd'* [F. *descendre*—from L. *descen'dĕrĕ*, to descend—from *de*, *scando*, I climb: It. *discendere*]: to move from a higher to a lower place; to go downward, as a hill; to fall or come down; to invade; to come suddenly; to proceed or pass from, as from father to son; to stoop, as to wrong. **DESCEN'DING**, imp.: ADJ. coming down. **DESCEN'DED**, pp. **DESCEN'DANT**, n. any one proceeding from an ancestor; offspring (see HEIR: CONSANGUINITY: etc.: SUCCESSION). **DESCEN'DENT**, a. [L. *descen'dens* or *descenden'tem*, descending]: sinking; proceeding from an ancestor; descending or falling. **DESCEN'DIBLE**, a. *-dĭ-bl*, that may be descended; that may descend from an ancestor to an heir. **DESCEN'DIBIL'ITY**, n. *-bĭl'ĭ-tĭ*, the capability of being transmitted. **DESCEN'SION**, n. *-sĕn'shŭn* [F.—L.]: the act of going downward; a failing; declension; degradation. **DESCEN'SIONAL**, a. pertaining to. **DESCEN'SIVE**, a. *-sĭv*, tending to descend. **DESCENT**, n. *dĕ-sĕnt'* [OF. *descente*, a sudden fall]: act of descending; progress downward; slope; declivity; a hostile invasion from sea; birth; lineage; offspring; passing from an ancestor to an heir. **DESCENDING-LETTER**, in *printing*, a letter which descends below the line, as *f*, *g*, *j*, *p*, *q*, *y*.—SYN. of 'descent': assault; invasion; attack; lineage; extraction; birth; degradation; incursion; derivation; descendants; issue; bottom.

DESCENT', **LINE OF SWIFTEST**: line along which a body falling through the action of gravity, passes most quickly from one point to another. It is proved that, when one point is not directly over the other, the line of swiftest descent is an arc of a cycloid (q.v.).

DESCENT OF MAN: believed, according to man's intuitions from the beginning, to be in some way a divine lineage; declared by Jesus Christ to be that of an offspring of the living and eternal God as Father; asserted in recent years by profound and accurate observers of the facts of animal life and investigators of the laws of matter, to be a descent which is in reality an ascent through an indefinitely extended line of animal forms. This last assertion of physical science, when it fits to itself the wings of metaphysical speculation, at times denies or obscures man's divine lineage—thus tending to reduce man to an animal term and to exclude God; but it is in fact, when confined within the limits of purely physical science, a hypothesis which neither affirms nor denies man's derivation from God—leaving that question to be decided by evidence in other spheres of investigation. As a part of what is known by the general name of the Evolutionary hypothesis, it numbers doubtless among its great company of adherents many who stoutly believe that humanity is traceable in its origin, to God. The evolutionary view of the descent of man is here presented in one of its fundamental forms—the Darwinian: see Darwin's *Descent of Man* (2d ed. Lond. 1875). Other forms, in which, with the observation of facts, is mingled more of metaphysical speculation, may be found in Huxley's *Man's Place in Nature* (Lond. 1864), and Hæckel's *Anthropogenie* (*Evolution of Man*) (trans. 1879); also Herbert Spencer's voluminous writings.

Before attempting to prosecute the inquiry into the evolutionary hypothesis as to the descent of man, a considerable amount of preparatory study is needed. The reader must bring to the task (1) some knowledge of the general progress of the sciences; (2) some acquaintance with the history and progress of biology, and of the main facts of morphology, physiology, and distribution; (3) a knowledge of the necessity for some theory of the origin of these biological phenomena, and an understanding of the nature of the evidence for and against each of the two rival theories; (4) he must be in possession of the facts respecting the antiquity of man. (For information and reference on these heads, see DARWINIAN THEORY: MAN, ANTIQUITY OF: DEVELOPMENT OF THE EMBRYO: SPECIES.)

Long before the publication of Darwin's *Origin of Species*, the evolutionary hypothesis had been maintained by Lamarck and others. Since that time it has been strongly upheld by numerous naturalists, but by none, so fully and carefully as by Darwin.

The objects of Darwin's work are, 'to consider, firstly, whether man, like every other species, is descended from some pre-existing form; secondly, the manner of his development; and thirdly, the value of the differences between the so-called races of man.'

1. Man is constructed on the same type as other mammals; his bones, muscles, nerves, blood-vessels, and viscera can be compared with theirs; even in his brain every fold and fissure can be compared with that of the orang; and it has been anatomically demonstrated that in

the structure of the brain, and of all other parts of the body, man differs less from the higher apes, than these do from the lower Primates. The physiological resemblance is, if possible, even more complete: man is liable to receive the diseases of animals, and communicate his to them; and this proves their close similarity in blood and tissues. Monkeys suffer from the same diseases, exhibit the same peculiarities of taste, and are infested by closely allied parasites. The process of reproduction, too, closely corresponds in all its details; the difference between the sexes is completely analogous; even the age of maturity is by no means so widely different as might appear, for the orang is not adult until 10 or 15 years old.

The development of man agrees thoroughly with that of other mammals, and exhibits the most complete resemblance with that of the higher apes (see DEVELOPMENT OF THE EMBRYO).

Rudimentary organs are peculiarly numerous in the human body. Many muscles characteristic of the lower animals are occasionally, or constantly, present in the human body in this state; the muscles for twitching the skin furnish good instances of this. The superficial muscles of the scalp, and the numerous muscles of the ear, belong to the same system, and in rare instances are functional. The blunt point projecting from the inwardly folded margin of the ear, is probably homologous with the tip of the erect and pointed ear of lower animals. Other examples are the nictitating membrane, the scanty development of hair, the vermiform appendix of the cœcum, and even the wisdom teeth. A certain foramen occasionally present in the humerus of man, and much more frequently in the humerus of animals, existed much more commonly in prehistoric times; so, too, in skulls and other characters the ancient races may be judged to stand nearer the brute. The coccyx of man and the higher apes is a true tail, which during development projects beyond the legs, and occasionally persists during adult life. In all cases it is furnished with an extensor and other muscles, and contains a continuation of the spinal cord.

2. *Manner of Development.*—The variability of man, familiar to us in features only, is no less great in every other respect; dimension, proportion, form, and structure, both internal and external, all alike vary to an unexpected degree. Thus, 558 muscular variations have been observed in 36 bodies, of which one possessed 25 distinct abnormalities, and none was completely normal.

The variability of mental faculties notorious in man, is represented in animals—as each dog or monkey shows—and the inheritance of mental peculiarities is as evident as that of physical ones, for man and beast alike.

Variability depends to some extent upon external conditions, largely, also, upon use and disuse of parts, and other circumstances (see DARWINIAN THEORY, *Laws of Variation*). Arrested development may occur, leading to the reduction or suppression of certain parts, or long lost characters may frequently appear through reversion, as in the case of a human subject which abnormally resembled certain apes in no less than seven of his muscles. Correlated variations also take place, and others which must provisionally be termed spontaneous.

Man, like other animals, tends to increase with extreme rapidity; his rate of increase is, however, checked by the difficulty of gaining subsistence, by disease, war, infanticide, and the like.

Seeing, then, that man varies like the lower animals, and tends to increase beyond the means of subsistence; seeing, too, that in course of his incessant migration he must have been exposed to the most diversified conditions, he and his early progenitors must have been exposed to a struggle for existence, and consequently to the rigid law of natural selection, which would tend to preserve advantageous variations of intellectual and social faculties, as well as of bodily structure. Commencing with the latter, we find the hands of the *Quadrumana* of similar type to our own, but far less perfectly adapted for diversified uses, though admirably so for climbing. As some ancient Primate became less arboreal, it would needs become more strictly quadrupedal, like a baboon, or more bipedal. For many actions it is evident that the anterior members should be spared from rougher uses and left free, and this would necessitate firmer standing on the feet, which accordingly have become flat, and lost most of their power of prehension. Hence, we can see how it would have been advantageous to the progenitors of man to have become more and more erect, and the higher apes in fact show various intermediate stages between the quadrupedal and the bipedal type. This change of posture would render necessary endless changes of structures, besides those of the four limbs; the pelvis having to be broadened, the spine doubly curved, and the head fixed in an altered position. As stones and clubs became substituted for the teeth in fighting, the jaws and canines, with the jaw muscles and their bony attachments, would become reduced, and the adult skull would resemble more and more that of existing man. As the mental faculties developed, the brain would become larger, and this increase in weight would affect the size and shape of the spinal column and skull. The coating of hair, too, would diminish, probably chiefly through sexual selection, though other reasons are not wanting. The rudimentary character of the tail in man and the higher apes may be largely ascribed to disuse; the friction, too, of the sitting posture would not be without effect, as is evidenced by the extremely short and callous tail of *Macacus brunneus*, and its total abortion in the allied species *M. ecaudatus*.

Besides the acquirement of new characters by sexual selection, changes might be produced also by those unknown agencies which occasionally induce strongly marked variations, not necessarily of physiological importance, on our domestic animals.

Judging from the habits of savages, and of the majority of the quadrumana, primeval man and his progenitors probably lived in society; and favorable variations would thus act and react upon the individuals and the society. Social life would be immensely favored by the comparative weakness and defenselessness of man and his progenitors; and his social and intellectual qualities, even in their lowest state, would more than compensate for these disadvantages. Even the lowest races thus maintain themselves against climate or wild beasts, while in some warm continents or islands, like Australia or Borneo, no special danger exists.

Comparison of the Mental Powers of Man and the Lower Animals.—The immense difference between the mental powers of the highest ape and the lowest savage has now to be accounted for. Between the highest men of the highest races and the lowest savages, there exist the finest gradations, and no one denies that they might pass and be developed into each other. Similarly, between one of the lowest fishes, as a lamprey or a lancelet, and one of the highest apes, there is a much wider interval in mental power than that between an ape and man; yet this is filled by numberless gradations. Any fundamental difference in the merely mental faculty between man and the lower animals has not been clearly defined; consequently, numberless gradations are readily conceivable.

As man possesses the same senses as the lower animals, his fundamental intuitions (if all these be conceded to originate solely from the senses) must be the same. Some instincts (see INSTINCT), too, he has in common, as well as all the emotions. Terror, suspicion, courage and timidity, rage and revenge, love and jealousy, love of approbation and pride, shame, humor, and magnanimity, all are possessed by the higher animals. Nor are the more intellectual emotions and faculties absent: excitement and ennui, wonder and curiosity are readily observed in animals; while imitation, attention, memory, imagination, and even a power of reasoning within certain lines, are evinced; as innumerable anecdotes bear witness. Some traces of high intellectual powers are present; a dog has by some been judged to have powers of abstraction, of forming general conceptions; it certainly retains its mental individuality, and may conceivably possess self-consciousness in some insipient form. And it must be remembered, 'how little can the hard-worked wife of a degraded Australian savage, who uses very few abstract words, and cannot count above four, exert her self-consciousness, or reflect on the nature of her own existence.'

The faculty of language is justly considered one of the chief distinctions between man and the lower animals. Yet even here there are gradations (see PHILOLOGY); and the Evolution of Language by Natural Selection is now well known. That the sense of beauty, in its elementary forms, is present in animals, is deemed probable from their sexual selection and habits.

There is evidence that numerous races of man are as destitute of the idea of religion as of words to express it; while, on the other hand, the dog regards his master with a reverent, submissive, yet hopeful love, not easily distinguishable in kind from the religious emotions of humanity. The belief in spiritual agencies naturally follows from other mental powers.

It is the moral sense or conscience which probably affords the best and highest distinction between man and the lower animals; and its origin is accounted for by Darwin on the view, elaborately expounded and supported in chap. iv., 'that any animal whatever, endowed with well-marked social instincts, the parental and filial affections being here included, would inevitably acquire a moral sense or conscience, as soon as its intellectual powers had become as well, or nearly as well developed as in man.'

Development of the Intellectual and Moral Faculties during Primeval and Civilized Times.—Under this head are discussed, the advancement of the intellectual powers through Natural Selection, and their increase and modification by imitation, reason, and experience; the evolution of the social and moral faculties, at first strictly limited to the same tribe, and chiefly stimulated by such external agencies as natural selection, or praise and blame, but increasing in extent and in complexity, and reaching an internal sanction. The action of natural selection in preserving and advancing favorable variations among savage tribes, and its action upon civilized nations, which all are held to have arisen from barbarism, are also examined in detail.

On the Affinities and Genealogy of Man.—Man holds no more than sub-ordinal rank among the *Primates*, in the Natural System of Classification, which is a genealogical one (see ZOOLOGY: DARWINIAN THEORY): and is most closely related to the anthropomorphous apes, themselves a highly specialized sub-group of the *Catarrhini*, or Old World monkeys. To this stock, therefore, it is inferred, man's early progenitors must have belonged. But we must not suppose either that the anthropomorphous progenitor of man was any existing ape, nor that the more remote ancestor of the whole Simian stock, including man, was identical with, or even closely resembled any existing ape or monkey. The great break in the organic chain between man and his nearest allies, which cannot be bridged over by any known extinct or living species, though apparently a very serious objection, is not really of much weight to those who, for general reasons (see DARWINIAN THEORY), believe in the general principle of evolution. For such breaks, and physically far more striking ones, exist between the orang and its allies, between the elephant, the horse, or the ornithorhynchus, and other mammals; and may be considered to depend merely on the number of related forms which have become extinct; while the absence of their fossil remains is explained by the imperfection of the geological record, which, however, is being continually opened more fully to our inspection, thus supplying the missing links. The lower stages or the genealogy of man must be left for the student of vertebrate morphology in general.

On the Races of Man.—Accepting the ordinary anthropological data (see ETHNOLOGY), Darwin discusses the value of the differences between races from the classificatory point of view, and how they have originated. The question whether mankind consists of one or several species is debated, and shown to be a matter of comparative indifference, since the distinctness of racial type is demonstrated on one hand, and their unity of origin on the other. On the whole, the term sub-species is preferred. The extinction of old races, and the formation of new, are fully considered.

Sexual Selection in animals is very fully discussed; receiving no less than eleven chapters.

The secondary sexual characters of man are then described .The greater size, strength, courage, pugnacity and energy of man, as compared with women, seem to have been acquired chiefly through the contests of the males for the possession of the females; while his greater intellectual vigor would be due rather to natural selection. Men acquired beards as a sexual ornament, and women, for the same reason, became comparatively denuded of hair, and so with other characters. In the last chapter the whole argument is recapitulated and summarized; and the monumental work concludes with a brief indication of the applications of the principle of sexual selection to the welfare and progress of society, and with the reflection, that as man has already risen to the very summit of the organic scale, he may 'hope for a still higher destiny in the distant future.'

In criticism of this hypothesis, it is alleged that this learned and brilliant advocacy, while instructively rich in scientific facts before undiscovered or unregarded, is also dependent at certain important points, on probability and conjecture. It is forcible in its showing of man's bodily relationship to the other animals; and by its presentation of that anciently known, never denied fact, it sets that fact as a strong witness for evolution in the department of man's physical organism; though even here evolution cannot yet be strictly deemed more than a hypothesis expectant of further verification. Regarding man's merely intellectual evolution, its dependence on conjecture is held to weaken its force, though it is not without some considerations worthy of respectful study. It is in its assertion of the evolution of man's conscience and whole moral nature from a merely animal basis, that it will fail with a large class of candid minds until it can bring to them something more than the assertions of a merely physical scientist in a realm beyond the physical—assertions all whose force must depend on their conceding his primal assumption, actual though undeclared, that there is no realm to be considered other than the physical.

The Darwinian hypothesis has been productive of many beneficent results. It has stimulated science to an accurate and thorough investigation of the facts of nature; it has brought an epoch in thought; it has compelled the advocates of many time-honored systems to a re-adjustment of those systems in a clearer light and a more balanced philosophy. See SPECIES.

DESCRIBE, v. *dĕ-skrīb'* [L. *descrībĕrĕ*, to represent by drawing—from *de*, fully; *scrībo*, I write: It. *descrivere*]: to represent by drawing; to draw; to delineate; to represent in words or by signs; to show by marks or figures. DESCRI'BING, imp. DESCRIBED', pp. *-skrībd'*. DESCRI'BABLE, a. *-bă·bl*, that may be described. DESCRI'BER, n. one who. DESCRIP'TION, n. *-skrĭp'shŭn* [F. *description*—from L. *de*, *scriptus*, written]: a representation in words; a delineation by marks or signs; a sort or class to which certain particulars or qualities are applicable. DESCRIP'TIVE, a. *-tĭv*, tending to describe or represent. DESCRIP'TIVELY, ad. *-lĭ*. DESCRIP'TIVENESS, n. the state of being descriptive. —SYN. of 'describe': to depict; characterize; represent; relate; recount; name; narrate; express; explain; portray; trace out; sketch;—of 'description': narrative; narration; detail; explanation; representation; account; definition; recital; report; relation; delineation; cast; sort; turn; sketch.

DESCRY, v. *dĕ-skrī'* [OF. *descrire* for *descrivre*, to describe: F. *décrire*—from L. *descrīběrě*, to delineate, to describe—from *de*, *scrībo*, I write]: to make out; to detect at a distance; to espy; to discover anything concealed: N. in *OE.*, discovery. DESCRY'ING, imp. DESCRIED', pp. *-skrīd'*. DESCRI'ER, n. one who. *Note.*—DESCRY is really a doublet of *describe*, though usually given as another form of *decry*, and derived from OF. *descrier*, now *décrier*, to cry down—from *de*, *crier*, to cry, thus making the literal sense, 'to make an outcry on discovering what one has been on the watch for.'—SYN. of 'descry': to discover; detect; discern; see; behold; reveal; recognize.

DESECRATE, v. *dĕs'ĕ-krāt* [L. *desecrātus*, declared as sacred, consecrated, and later desecrated—from *de*, away, not; *sacrārĕ*, to make sacred—from *sacer*, sacred]: to profane anything sacred; to divert from a sacred purpose; to divest of a sacred office. DES'ECRATING, imp. DES'ECRATED, pp. DES'ECRATER, n. one who. DES'ECRA'TION, n. *-krā'shŭn*, the profaning of anything sacred.

DESERET: see UTAH.

DESERT, n. *dĕz'ĕrt* [F. *désert*, solitary—from L. *desertus*, solitary, waste—from *de*, *sertus*, joined, connected: It. *diserto*]: a wilderness; a solitude; a vast sandy plain: an uninhabited place. ADJ. wild; waste; solitary: DESERT FLORA, the flora growing in the desert. According to Dr. C. C. Parry, that of N. America, between 32° and 42° n. lat., presents a contrast between the annual and perennial plants, the former being of slight texture, evanescent and rapidly maturing; the latter exhibiting scanty foliage, frequently spinescent branches, and large tap roots, while the leaves are frequently coated with a copious resinous varnish, or a dense woolly tomentum, serving in either case to check the growth. The plants growing in the deserts of the old world present similar characteristics. DESERT, v. *dĕ-zĕrt'*, to leave entirely; to forsake; to abandon; to quit with the view of not returning; to run away. DESERT'ING, imp. DESERT'ED, pp. DESERT'ER, n. a soldier or sailor who runs away from the service, thus deserting his flag; in war he is punishable by death or otherwise as a court-martial may order; in peace the punishment usually is not severe. **DESER'TION**, n. *shŭn* [F.—L.]: the act of abandoning; the act of leaving with the intention of not returning, as a soldier or sailor; state of being forsaken.—SYN. of 'desert, v.': to relinquish; leave; quit; abdicate; depart from.

DESERT, n. *dĕ-zĕrt'* [OF. *deserte*, merit—from *deservir*, to deserve—*lit.*, a thing deserved]: that which entitles to reward or renders liable to punishment; merit or demerit; reward or punishment justly due; worth; excellence. **DESERT'LESS**, a. without claim to favor, reward, or honors. SYN. of 'desert': merit; demerit; excellence; worth; due.

DESERT: any portion of the earth's surface which, from its barrenness, as in the case of the arid plains of n. Africa and Arabia, or from its rank exuberance, as in the case of the *Silvas* of S. America, is unfitted to be the site of great commercial and industrial communities. Many names, each differing in meaning to some extent, are employed to designate the desert-plains of different countries. The *Desert* proper may be said to signify the vast sandy plains of Africa and Arabia; while the flats extending from the Black Sea on the n.,and from Persia on the s.,onward across Tibet and Tartary to the n.e. coasts of Asia,are called *Steppes;* those in the n. division of S. America, *Silvas* or desert-forests; those in other portions of S. America, *Llanos* and *Pampas*. For what was long known as the Great American D., see AMERICA (*Climate*). All these, though widely differing in individual characteristics, have in common the important physical features of wide extent and general level. The *Oases*, occasional spots in the desert where springs arise, and where the waste is enlivened by vegetation, are usually lower than the general level of the surrounding plain. A famous desert-ground is the huge tract of comparatively rainless country almost continuous from the n. Atlantic to the n. Pacific, forming a great belt of sand from e. to w., across the whole eastern hemisphere. The *Great Sahara*, grand type of all desert-grounds, beginning from Cape Nun on the n.w. coast of Africa, stretches away eastward from the Atlantic to the banks of the Nile, its e. division being frequently called the *Libyan desert*. Crossing the Nile, by the irrigation and inundations of which alone Egypt is preserved from subsiding into the waste condition of the surrounding country, the desert is again found, interposing a strip of hot sand between the right bank of the Nile and the w. border of the Red Sea, upon whose shores no rain ever falls. On the right shore of the Red Sea, desert-grounds unvisited by rains prevail over the greater portion of Arabia, and stretch onward, with occasional interruptions, over Persia, Tibet, and the Tartaries. The most extensive desert in the e. portion of these arid districts is called the Desert of Gobi, which extends from the w. extremity of Tibet n.e. to the shores of Lake Baikal. For cause of this extraordinary zone of parched land, and of similar smaller tracts in other parts of the world, see RAIN.

DESERTAS, *dā-sĕr'tâs:* general name of three rocky islands in the Atlantic Ocean, s.e.of Madeira; lat. 32° 31' n., long. 16° 30' w. The southern and largest island is called Bugio; the centre, Deserta Grande; and the northern, Chão Deserta Grande has a length of six m., breadth half a mile to one mile; Chao and Bugio are only about a mile in length—the latter about the same in breadth, but the former not more than a quarter. The D. are not inhabited, but they yield considerable pasturage, and are visited at certain seasons of the year by fishermen and herdsmen.

DESER'TION from the Public Service of the Country: crime of a man absconding, during the period for which he is enlisted, from the service of the army or navy; thus deserting his flag. In war the offense is punishable by death or otherwise as a court-martial may order; in peace the penalty is usually not severe. The number of deserters from the British army is very great; in 1874, it was 7,939; in 1879, it was 4,140. The introduction of the short service system, and improved arrangments for enlisting (see Enlistment), have tended to reduce the number. Many experienced officers attribute the evil to the temptations of bounty (see Bounty).

DESERTION OF SPOUSE: abandoning of husband by wife, or of wife by husband. In England, desertion by either spouse is made a ground of judicial separation; and desertion coupled with adultery is a ground for dissolution of marriage. There is provision for the protection of property acquired by a wife who has been deserted.

DESERTION OF THE DIET: see Diet, Desertion of.

DESERVE, v. *dĕ zėrv'* [L. *deservīrĕ*, to serve zealously—from *de*, *servĭō*, I serve: Norm. F. *déservir*, to earn by service]: to be worthy of from zealous service; to merit; to be worthy of in a bad sense; to merit reward. Deser'ving, imp. Adj. meritorious; worthy of promotion; in *OE.*, deserts. Deserved', pp. *-zėrvd'*. Deser'vedly, ad. *-vĕd-lĭ*, according to conduct good or bad. Deser'vingly, ad. *-lĭ*. Deser'ver, n. one who.

DESFUL: see Dizful.

DESHABILLE, a. *dĕz'ă-bēl* [F. *déshabillé*, undress—from *dès* for L. *dis*, apart; *habiller*, to dress—from L. *habĭlĭs*, fit, suitable]: dressed loosely: N. an undress; a loose morning dress; a careless untidy state as to dress.

DESIATINE, n. *dĕs'ĭ-ă-tĭn:* a Russian measure of area, 104 desiatines = a square verst, and 3 versts = 2 English miles.

DESICCATE, v *dĕs'ĭk-kāt* or *de-sĭk'kāt* [L. *desiccātus*, dried up—from *de*, *siccus*, dry]: to dry up; to deprive or exhaust of moisture; to become dry. Des'iccating, imp. Des'iccated, pp. Adj. dried up. Des'iccant, a. *-kănt*, drying: N. a medicine that dries a sore; it has astringent properties checking secretion and exhalation: examples are calcium, quicklime, fused carbonate of potash, and oil of vitriol. Des'icca'tion, n. *-ĭk-kā'shŭn* [F.—L.]: the act of making dry; the state of being dried by heat, dry air, or chemical agents which have no affinity for water. DESIC′CATIVE, a. *-kă-tĭv*, tending to dry. DESICCATION CRACKS, in *geol.*, rents in sedimentary strata, caused by shrinkage through drying. Were such desiccated beds to be overlaid by a new deposit of mud or other soft matter, portions of it would enter these cracks, and the two strata, on being separated (after consolidation) would present—the lower, the 'mold,' and the upper, the 'casts' of these fissures. Such appearances are frequent among the strata of all formations, and are not to be confounded with *joints, cleavage*, and similar phenomena.

DESICCATED FRUIT: see FRUIT.

DESIDERATE, v. *dĕ-sĭd′ėr-āt* [L. *desidĕrātus*, earnestly wished for: It. *desiderare;* F. *désirer*]: to earnestly wish for; to want; to miss. DESID′ERATING, imp. DESID′ERATED, pp. DESID′ERATIVE, a. *-ā-tĭv*, expressing or denoting desire. DESID′ERA′TUM, n. *-ā-tŭm*, DESID′ERA′TA, n. plu. *-ā′tă* [L.]: anything desired or wanted; any desirable improvement.

DESIGN, v. *dĕ-zīn′* or *-sīn′* [F. *désigner*, to describe—from L. *designārĕ*, to mark out—from *de, signo*, I mark or seal: It. *designare*]: to trace out by marks; to project; to form in the mind; to intend; to purpose; to form or plan by drawing the outline; to plan; to invent: N. a project; a scheme; purpose; intention; a plan or representation of a thing by an outline; an idea or plan in the mind meant to be expressed in a visible form; figures or drawings for cloth, etc.; the plan of a building in all its parts. DESIGN′ING, imp. ADJ. forming a design; insidiously contriving schemes of mischief; deceitful: N. the act of delineating the appearance of objects. DESIGNED′, pp. *-zīnd′*. DESIGN′ER, n. one who. DESIGN′ABLE, a. *-ă-bl*, that may be designed or marked out. DESIGN′EDLY, ad. *-ĕd-lĭ*, intentionally. DESIGN′LESS, a. without design or intention. DESIGN′LESSLY, ad. *-lĕs-lĭ*. A SCHOOL OF DESIGN, an institution in which are taught the principles of drawing as they are connected with the industrial arts. DESIGNATE, v. *dĕs′ĭg-nāt* [L. *designātus*, marked out]: to mark out or show; to distinguish by marks or description; to name; to point out. ADJ. pointed out or named, as a bishop designate. DES′IGNATING, imp. DES′IGNATED, pp. DES′IGNA′TION, n. *-nā′shŭn* [F.—L.]: the act of pointing out; a showing or pointing; a distinguishing name or mark; appointment. DES′IGNATIVE, a. *-nā-tĭv*, serving to indicate. DESIGNMENT, n. *dĕ-sīn′mĕnt*, sketch; delineation; purpose.—SYN. of 'design, v.': to mean; sketch; propose; project; delineate; trace out; draw; indicate; show; select; designate; contrive; —of 'designate': to style; denominate; describe; characterize; entitle—of 'designation': name; title; appellation; denomination; indication; allotment; application; signification.

DESIGN′, in Pictorial Art: preliminary work, either in outline or color, in which the conception of the artist is indicated, and more or less fully expressed. The design ought to exhibit the whole composition and drawing of the work, though the last only in a general way. The design ought thus to be a correct, though not a complete, representation of the future work. When colors are employed in a design, it is rather tentatively, and for the purpose of ascertaining what their effect will be, than with a view to actually producing the effect required. A sketch differs from a design, inasmuch as the former is generally applied to a first drawing from an object placed before the artist; the latter, to a first drawing of an object which he has imagined, either wholly, or in the attitude and combinations in which he represents it. In architecture, the term is applied to a drawing mathematically correct, but in which the effects to the eye which will ultimately be produced by distance and by light and shade, are altogether ignored. An architectural design is consequently scarcely intelligible on first sight.

Designing on wood for wood-cuts or engravings is now a distinct profession, followed by a class of artists. A design of this kind consists of a drawing in pencil on the wood, the effects being as closely as possible what the printed engraving is intended to represent. See WOOD-ENGRAVING.

DESIGN, GOVERNMENT SCHOOLS OF: original designation in Great Britain of what are now officially termed 'Schools of Art.' The establishment of schools of design had for its object the training of designers and artisans in the principles and practice of the fine arts, with a view to the improvement of the artistic quality of manufactures, by imparting, where requisite, more symmetry of form, harmonious arrangement of coloring, and general appropriateness of decoration. To Scotland is due the credit of having taken the lead in this matter, schools having been established at Edinburgh in 1760, 'for teaching and promoting the art of drawing for the use of manufacturers, especially the drawing of patterns for the linen and woolen manufactures.' In 1837, a Central School of Design was established at Somerset House in London, followed shortly afterward by about 20 branch schools in important seats of manufacturing industry. These schools were at first placed under the control of the board of trade, and the education in art afforded by them was in a great measure restricted to students of the artisan class. The Great Exhibition of 1851, which brought to light the marked deficiency in the artistic element of British as compared with foreign manufactures, infused new vigor into national art education, and with Henry Cole's appointment as general supt., the complete reorganization of the government scheme for national art education soon followed. It was grounded on the conviction, that in order to improve the artistic taste of our manufactures, the first step was to elevate the art education of the people at large. For this end it was to be brought into closer alliance with the system of general education. A National Art Training-school for educating art-teachers was instituted at Marlborough House. The nucleus of an industrial museum was also formed there, the government granting a fund of £5,000 for the purchase of specimens of industrial art from the Great Exhibition collection. Such was the comparatively humble origin of the magnificent museum at South Kensington. From this date a rapid increase took place in the establishment of schools of art, which in 1881 numbered 160, all over the country. Including, however, the elementary day schools in which children are instructed in drawing by teachers holding art-certificates of the second or third grade, the art-schools have risen from 11,000 in 1852, to 32,000 in 1881. The following summary is abstracted from the *Science and Art Directory* of the committee of council on education, South Kensington.

The Central National Art Training-school for the United Kingdom is established at South Kensington, for educating art masters and mistresses, and for training students in drawing, designing, and modelling according to the requirements of trade and manufactures. A limited number of students are received into training as art-teachers, receiving a maintenance allowance proportioned to their attainments and the certificates of qualifications obtained by them; in return for which they may be required to perform certain duties as teachers, and must engage to accept the situations to which they are recommended.

'*National Art Scholarship.*—A limited number of duly qualified students from the local schools of art, who may have given evidence of special aptitude for design, are eligible for appointments to national scholarships in the National Art Training-school, with weekly allowance for maintenance: these appointments are for one year only, but in cases of marked proficiency they may be renewed for a second year.

'*Aid to Schools of Art, etc.*—The department will aid the instruction given in schools of art, when under the direction of a local committee of not less than five well-known responsible persons, and instructed by teachers holding one or more art certificates of the third grade, provided that day classes be held, and that artisan night classes are taught at least three times in each week for two hours.

'*Annual Examinations.*—At the close of April or beginning of May in each year, a competitive local examination in drawing is held in all the schools of art on two consecutive evenings, conducted by means of examination papers supplied by the department, the subjects given being freehand and model drawing, practical geometry and linear perspective; certificates and prizes being awarded to the successful competitors. The works of the students from all the schools of art are annually transmitted to the department in April for inspection, prizes being awarded to the most meritorious.

'*National Competition.*—The best of the more advanced of the above works are selected to compete with each other in this competition, which is held at Kensington annually in May. The prize list for awards in this competition includes 10 gold, 30 silver, and 60 bronze medals. Additional prizes of works of art, books, etc., are also awarded.

'*Prizes to Art Masters.*—Monetary prizes are awarded annually to the head-masters of schools of art, for the most satisfactory results in teaching.

'*Circulation of Books and Examples.*—The art library and collections of decorative art, etc., at S. Kensington are as far as possible made available for instruction in schools of art.

'*Grants for New Buildings, and Purchase of Examples.*—In aid of new buildings to be adapted for schools of art, a grant not exceeding 2*s.* 6*d.* per superficial foot of internal area is made, up to a maximum of 4,000 ft. Grants of 50 per cent. are made toward the cost of art examples selected from lists approved by the department, on behalf of art schools, mechanics' and other educational institutions.' See TECHNICAL EDUCATION.

In the United States, free elementary instruction in drawing is provided in many states. In Mass. and some other states this has been developed in its higher departments. Schools of design for instruction in mechanical and decorative drawing are numerous, mostly under non-governmental auspices. The National Acad. of Design in New York, founded 1828, is a prominent specimen of such institutions. The Cooper Institute (q.v.) in New York gives free instruction of a high order in various branches of art, and there are very many institutions for similar purposes, though of lower grade and less scope, in all parts of the country.

DESIGNS', COPYRIGHT IN: ownership protected by law in designs for articles, whether of ornament or utility. Acding to the U. S. copyright laws as they existed 1888, Aug., any person desiring to secure a copyright for a painting, statute, model, or design intended to be perfected as a work of the fine arts, so as to prevent infringement by copying, engraving, or vending such design, was obliged to accompany his application for copyright with a definite description of the same, and to send to the librarian of congress within 10 days from the completion of the work a photograph of it at least as large as 'cabinet size.' A copyright may be secured for a projected work as well as for a completed one. A fee of 50 cents must accompany the application and description and 50 cents in addition for each certificate of copyright that may be desired. The copyright is not perfected till the photograph of the article has been forwarded as above, and no copyright is held to be valid unless the official notification is inscribed upon some portion of the face or front thereof or on the face of the substance on which the same is mounted. Any person printing or inscribing the official notice before obtaining the copyright will be liable to a fine of $100.

DESINENCE, n. *dĕs'ĭ-nĕns* [L. *desĭnens*, leaving off, desisting—from *de*, *sinens*, letting, giving leave: It. *desinente*]: termination; end; close. DES'INENT, a. *-nĕnt*, ending; lowermost.

DESIO, *dā-sē'ō:* town of n. Italy, province of Milan. It is well-built, surrounded with gardens and vineyards, and has a fine hospital. Pop. 5,500.

DESIRADE, *dā-zē-râd'*, or DESIDERADE, *dĕs-ĭd-ėr-âd'*, or DESEADA, *dĕs-ė-â'da:* island, first of Columbus's discoveries during his second voyage; about 4 m. e. of **Guadeloupe** (q.v.), of which, under France, it is a political dependency; area above 10 sq. m. The people are chiefly emancipated slaves. The surface is elevated in proportion to the area, and the soil, though not generally fertile, is yet said to yield excellent cotton. Pop. abt. 2,000.

DESIRE, v. *dĕ-zīr′* [F. *désir*, a desire; *désirer*, to desire—from L. *desidĕrārĕ*, to long for, to desire; probably from *sidĕră*, the stars, and thus *lit.*, to turn the eyes from the stars, hence to regret]: to wish or long for; to ask; to entreat; to request: N. a wish to obtain; some degree of eagerness to gain and possess; a coveting for some object of pleasure or delight; request; prayer; that which is desired. **DESI′RING**, imp. **DESIRED′**, pp. *-zīrd′*. **DESI′RABLE**, a. *-zī′ră-bl* [F.—L.]: that is to be desired; that which may be longed for; pleasing; agreeable. **DESI′RABLY**, ad. *-ră-blĭ*. **DESI′RABLENESS**, n. *-bl-nĕs*, the quality of being desirable. **DESI′RER**, n. one who. **DESIRE′LESS**, a. free from desire. **DESI′ROUS**, a. *-rŭs*, wishing to obtain; anxious to possess; coveting. **DESI′ROUSLY**, ad. *-lĭ*.—SYN. of 'desire, n.': wish; inclination; craving; appetency; eagerness; aspiration; longing; lust; request; petition.

DESIST, v. *dĕ-sĭst′* [F. *désister*—from L. *desistĕrĕ*, to leave off—from *de*, *sisto*, I stand: It. *desistere*]: to leave off; to forbear; to stop; to cease to act; to discontinue. **DESIST′ING**, imp. **DESIST′ED**, pp. **DESISTANCE**, n. *dĕ-sĭst′ăns*, ceasing to act; a stopping.

DESK, n. *dĕsk* [AS. *disc;* Dut. *disch;* Ger. *tisch*, a table, a board: L. *discus*, a round plate of stone or metal]: a sloping table for writing on; a portable writing-table in the form of a box when shut; the part of a pulpit on which the Bible lies: V. to shut up in a desk. **DESK′ING**, imp. **DESKED**, pp. *dĕskt*.

DES′MAN: see MUSK RAT.

DESMIDIÆ, n. plu. *dĕs-mĭd′ĭ ē*, or **DESMIDS**, n. plu. *dĕs′mĭds* [Gr. *desmos*, a chain; *eidos*, appearance]: minute fresh-water plants of a green color, somewhat like diatoms, but without a silicious epidermis. **DESMID′IAN**, n. *-ĭ-ăn*, one of the *Desmidiæ*.—*Desmidiæ*, according to the prevalent opinion of naturalists, are a tribe or group of *Algæ*, and as such ranked by some botanists among *Diatomaceæ* (q.v); while other naturalists regard them as belonging to the animal rather than to the vegetable kingdom, some also esteeming them to be vegetable who maintain the animal character of the true *Diatomaceæ*. They are among those lowest organisms which seem to connect the animal and vegetable kingdoms at their common starting-point. The D. are readily distinguished from the true *Diatomaceæ* by their rounded—not angular—form, and by their want of silicious covering; also by their color, which is a herbaceous green, while the *Diatomaceæ* are generally brownish. Unlike the *Diatomaceæ*, they shrivel up, and lose their form in drying. They are, like them, microscopic, but are usually found in stagnant or very slowly running water, sometimes in brackish, but never in salt water. They may often be procured in great numbers, by pouring the water in which they exist upon a cloth; and if the cloth is kept moist, they will live for a long time, and their progress may be observed. They all exhibit a transverse constriction, sometimes not very distinct, but often almost dividing the single cell which forms the organism into two parts. It is at this constriction that new cells are formed; but this process ceases after a while, and a true reproduction takes place by spores, either through conjugation (q.v.) or swarming (q.v.). It is very much on account of these modes of reproduction, and of the presence of starch in the D., that they are confidently referred by naturalists to the vegetable kingdom. See Ralfs on the *British Desmidieæ.*

DESMIOSPERMEÆ, n. plu. *dĕz-mĭ-o-spėr'mē-ē* [Gr. *desmios*, binding; *sperma*, a seed]: genus of rose-spored algæ, in which the spores form distinct chains like necklaces.

DESMOBRYA, n. plu. *dĕz-mō'brĭ-a* [Gr. *desmos*, a chain; a bond; *bruon*, a kind of mossy sea-weed]: ferns in which the fronds are produced terminally.

DESMO'DIUM GY'RANS: see MOVING PLANT.

DESMOGRAPHY, n. *dĕs-mŏg'ră-fĭ* [Gr. *desmos*, a ligament; *grapho*, I write]: a description of the ligaments of the body. DESMOL'OGY, n. *-mŏl'ŏ-jĭ* [Gr. *logos*, discourse]: the anatomy of the tendons and ligaments, or a description of them.

DES MOINES, *dė moyn':* city, cap. of Iowa and of Polk co.; on both sides of the D. M. river at its junction with the Raccoon; 88 m. s.s.e. of Fort Dodge, 138 m. e. of Omaha, 161 m. w.n.w. of Keokuk, 174 m. w. of Davenport, 357 m. w. of Chicago; lat. 41° 35′ n., long. 93° 40′ w. The locality formed a part of the Sac and Fox Indian reservation which the govt. purchased by treaty 1842. The Indians were allowed to remain there three years under the protection of U. S. troops, who established a post for which the original name Raccoon Forks was changed to Fort D. M., and at the expiration of this period the govt. set apart for its own use a tract of one sq. m. and opened the remainder to settlement. In 1846 the govt. ceded a tract of 160 acres to the state. The legislature at once authorized the organization of Polk co., rival towns sprang up immediately and strove to become the co. seat, and after a prolonged and bitter contest Fort D. M. won the honor. The first survey of the town was made 1846, July 8, the commissioners made the original entry 1848, May 12, the town was incorporated 1853, and designated by act of the legislature as the capital of the state in place of Iowa City 1854. A $35,000 statehouse was built, the archives were removed from the former capital by ox-teams 1857, and in the same year the town was chartered as a city with 'Fort' omitted from its name. It then extended about 2½ m. n. and s. and 4½ m. e. and w. The first sermon (funeral) was preached and the first church (Meth. Episc.) organized 1845, the first school-house built 1848, the first newspaper established 1849, and the first railroad train reached the city 1866, Aug. 29. From the time D. M. became a city it has enjoyed a rapid and almost un-interrupted prosperity, due to its unusual natural advantages and the practical energy of its citizens. It is located nearly in the centre of the state, possesses a healthy climate, has two rivers each 600 ft. wide and with an 8 ft. fall uniting within its corporate limits, and supplying a valuable water-power, and is built upon and surrounded by coal veins of seemingly inexhaustible richness. When the railroad touched it, it received a thorough quickening. In 1880, it had 155 manufacturing establishments, using $1,463,250 capital, employing 1,378 persons, paying $667,699 in wages, and yielding products valued at $4,220,709. During that year over 650 residences were built at a cost of $1,000,000, 15 business blocks, $340,000, and several churches, colleges, and public buildings, $405,000; the wholesale and jobbing trade reached $10,700,000, grain and produce $2,665,000, park $2,465,000, spirits $500,000, tobacco $179,500, barbed wire $183,000, breweries $146,000, flour mills $156,000, tin and sheet iron works $174,000, foundries and machine shops $176,000; and 15 coal mines operated by 700 men yielded 545,000 tons valued at $1,055,840. In 1888, 15 railroads and branches had stations in the city, 2,000 men were employed in the coal mines, the city was lighted by gas and electricity, had the Holly system of water works, 4 street railroads, 3 daily, 11 weekly, and 4 monthly publications. The public buildings included a new state capitol nearing completion at an estimated cost of $3,500,000, U. S. court-house and post-office ($250,000), state arsenal, where the civil war battle flags are kept, and 3 opera houses; educational, 2 universities, 3 colleges, high school, numerous public and private schools, and state, city, and public libraries. There were 51 churches divided denominationally as follows: Meth. Episc. 12, Bap. 7, Evangelical 5, Presb. 4, Rom. Cath , Congl., Christian, and Lutheran, each 3, Prot. Episc., Unit. Brethren, and Hebrew, each 2, Church of Christ, Friends, Unitarian, Unit. Presb., and Seventh-Day Adv., each one. Financial institutions were 5 national banks with a capital of $850,000, 5 state banks, capital $400,000, 4 loan and trust companies, capital $753,000, and 7 local insurance companies, capital $800,000. Pop. (1870) 12,035; (1880) 22,408; (1885) 32,469.

DES MOINES River: largest river in Io.; formed by the e. and w. forks in s.w. Minn.; flows s.s.e. to the capital city, then s.e. to a point about 4 m. below Keokuk, where it empties into the Miss. river; estimated length 500 m. It drains 10,000 sq. m. in Io.; flows through a region rich in agricultural and grazing grounds, bituminous coal, and timber; receives the water of Raccoon, North, Middle, South, and Boone rivers; and with a fall of 8 ft. supplies a large number of valuable mill sites along its banks.

DESMONCUS, *dĕz-mŏngk'ŭs:* genus of palms, with slender stems, climbing over shrubs and trees, like the Rattans (*Calamus*) of the E. Indies. They are the only American palms of this character. They have alternate pinnate leaves, with long hooked spines instead of several of the uppermost leaflets, which make them formidable to those who attempt to penetrate the forests where they grow. The species are numerous and all American.

DESMOULINS, *dā-mô-lăng'*, CAMILLE: 1762–1794, Apr. 5; b. Guise, in Picardy: a prominent personage of the French Revolution. He studied law at the Collége Louis-le-Grand, Paris; but on account of a stutter in his speech, did not prosecute the profession. His mind was filled with lofty but confused notions of classical republicanism, which found vent on the eve of the revolution in his *La Philosophie au Peuple Français* (Par. 1788), and *La France Libre* (Par. 1789). To his exaggerated denunciation was owing that outburst of popular fury which resulted in the destruction of the Bastile on the night of 1789, July 14. In the events of the Champ de Mars, 1792, Aug. 10, D., like his friend Danton, took a leading part, but was less implicated in the September massacres. Elected to the National Convention by the people of Paris, he voted for the death of Louis XVI. His relation to Danton, which had always in it something of dependence, induced him to take up the pen against the Girondists, and in his *Histoire des Brissotins*, he covered these moderate republicans with ridicule. In this, however, D. was not quite sincere, for many of the Girondists he highly esteemed, and he was himself by nature much more like Vergniaud and Brissot than like Robespierre and St. Just. When the guillotine was erected, D. saw his error, and bitterly repented his facile folly. Toward the end of 1793, he began to publish *Le Vieux Cordelier;* a journal which recommended, among other things, that the forms of justice should be restored, and attacked the members of the *Comité de Salut Public*. Twice accused before the Jacobin Club, he was at length, on the night of 1794, Mar. 30, with Danton, arrested, and brought before the Revolutionary Tribunal. When asked his age, D. replied: '*J'ai l'âge du sans-culotte, Jésus, c'est-à-dire trènte-trois ans, âge fatal aux révolutionnaires.*' He was condemned without a hearing, and mounted the scaffold with Danton, 1794, Apr. 5. His wife, the beautiful Lucile Duplessis, vainly endeavored to excite an insurrection in his favor, and a fortnight later, she also was guillotined.—D. was essentially an enthusiast and hero-worshipper, always leaning for support on some stronger spirit than his own. His first idol was Mirabeau, after whose death he devoted himself to Danton. His aspirations were noble, his sympathies magnanimous, but he had neither sufficient moral resolution to oppose the political excesses of the popular party, nor even, until the close of his career, sufficient insight to assure him of their injustice and folly. Gifted abundantly by nature, as the light-hearted Camille was, with wit, fancy, and feeling, one cannot help regretting that he did not live in less troublous times, when he might have given to the world, in the form of poesy or fiction, the treasures of his rich and sparkling genius.

DESNA, *dĕs'nâ:* river of Russia. It rises in the govt. of Smolensk, 50 m. s.e. of the town of Smolensk, flows s.e. through the govts. of Smolensk and Orel, until it reaches

Briansk, where it enters the govt. of Tchernigov, through which it flows s., then s.w. to the town of Tchernigov, and finally joins the Dnieper nearly opposite Kiew. The D. is 500 m. in length, and is navigable through almost all its course. Its chief affluents are the Seim, from the left, and from the right, the Snov.

DESOLATE, a. *dĕs'ō-lāt* [L. *desolātus*, laid waste, abandoned—from *de*, *solus*, alone: It. *desolare:* F. *désoler*]: laid waste and abandoned; uninhabited; desert; solitary; in a ruinous condition; without a companion; comfortless: V. to deprive of inhabitants; to lay waste; to ruin. DES'OLATING, imp. DES'OLATED, pp. DES'OLA'TION, n. *-ō-lā'shŭn* [F.—L.]: the act of desolating or laying waste; a solitary waste; ruin; destruction; a place deprived of inhabitants; gloom; great sorrow or distress. DES'OLATELY, ad. *-lĭ*. DES'OLATENESS, n. state of being desolate. DES'OLATER, or DES'OLATOR, n *-lā-tėr*, one who. DES'OLA'TORY, a. *-tėr-ĭ*, causing desolation.—SYN. of 'desolate, a.': lonely; waste; neglected; destroyed; afflicted;—of 'desolation': ravage; devastation; havoc; waste; destitution; sadness; melancholy; gloominess; gloom.

DE SOTO, *dā so'to*, HERNANDO: 1496–1542, June 5; b. Estremadura, Spain: discoverer. He received a univ. education through the favor of Pedrarias Davila, accompanied his patron when appointed gov. of Darien, 1519, and fearlessly opposed his oppressive administration. In 1528 he left Davila's service and undertook an exploration of the coasts of Guatemala and Yucatan for the purpose of discovering the stream that navigators believed connected the Atlantic and Pacific oceans. After examining 700 m. of coast line he abandoned his quest, and associated himself with Pizarro, then about to embark on his expedition for the conquest of Peru, 1532. He explored the highlands of that country, discovered the road that led to the capital, was commissioned by Pizzaro ambassador to the Peruvian monarch, opposed the detention of the inca after his capture and the payment of heavy ransom, and was specially conspicuous in the engagement that preceded the occupation of the capital. After the conquest he returned to Spain with a large fortune, married his patron's daughter, and obtained the emperor's consent that he should attempt the conquest of Fla. at his own expense. He organized an expedition of 20 officers, 24 priests, and 600 men, and sailed from San Lucas 1538, Apr., bearing the emperor's commission as gov. of the island of Cuba and pres. of the yet unacquired Fla. Leaving the women of the expedition at Havana, he pushed across the Gulf of Mexico, and anchored in the present Tampa Bay, on the w. coast of Fla., 1539, May 25. In July he sent all his ships to Havana, and then for nearly four years wandered from one point to another, in a vain search for the new Eldorado, which was believed to be richer in precious metals than any country then known, constantly deceived by the Indians, who directed him to remote sections for the coveted gold, and sustaining heavy losses in men and material through their hostility. He passed the winter of 1539–40 near Flint river, Fla., reached Mobile, Ala., in Oct., and then pushing forward in a n.w. direction, discovered the Miss. river early in 1541. The next winter he spent on the Washita river, and while returning down the Miss. died suddenly from fever. His body was sunk in the river that he discovered.

DESPAIR, n. *dĕ-spàr′* [F. *désespoir*, despair; OF. *desperer*, to despair—from L. *desperārĕ*, to have no hope; *desperātus*, given up, irremediable—from *de*, *spero*, I hope (see Desperate)]: utter hopelessness; complete despondency; desperation; hopelessness; loss of hope in God's mercy: V. to be without hope; to give up all expectation. Despair′ing, imp. Despaired′, pp. *-spärd′*. Despair′er, n. one who. Despair′ingly, ad. *-lĭ*.

DESPATCH: see Dispatch.

DESPERADO: see under Desperate.

DESPERATE, a. *dĕs′pär-āt* [L. *desperātus*, given up, irremediable—from *de*, away; *spero*, I hope: It. *disperare:* F. *désespérer*]: without hope; fearless of danger; reckless; beyond hope of recovery; irretrievable; without care of safety; furious. Des′perately, ad. *-lĭ*, hopelessly; furiously; madly; despairingly. Des′pera′do, n. *-ā′dō* [Sp.]: a reckless, furious man; one regardless of consequences; a madman—applied to the reckless criminal classes. Des′pera′tion, n. *-ā′shŭn*, a giving up of hope; despair; disregard of danger. Des′perateness, n. the state of being desperate. —Syn. of 'desperate': despairing; hopeless; desponding; rash; precipitate; headlong; furious; mad; frantic; forlorn; irrecoverable; irretrievable.

DESPICABLE: see under Despise.

DESPISE, v. *dĕ-spīz′* [OF. *despire*, to despise; *despisant*, and *despiz*, despising—from L. *despicĕrĕ*, to look down upon, to despise—from *de*, *specĭō*, I look]: to look down upon with scorn; to have a very low opinion of; to disdain. Despi′sing, imp. Despised′, pp. *-spīzd′*. Despi′ser, n. *-zėr*, one who. Despi′sable, a. *-ză-bl*, contemptible. Despi′singly, ad. *-zĭng-lĭ*. Despi′sedness, n. *-zĕd-nĕs*, the state of being despised. Despicable, a. *dĕs′pĭ-kă-bl*, that should be despised; vile; contemptible. Des′picably, ad. *-kă-blĭ*. Des′picableness, n. *-kă-bl-nĕs*, the quality of being despicable; meanness; vileness.—Syn. of 'despicable': mean; worthless; paltry; pitiful; degrading; base; sordid; low;—of 'despise': to scorn; contemn; slight; undervalue.

DESPITE, n. *dĕ-spīt′* [OF. *despit*, contempt, despite; F. *dépit*, vexation, anger—from L. *despectus*, a looking down upon]: violent hatred with contempt; extreme malice; defiance of opposition or difficulties, or contempt of them: V. to tease; to offend; to vex. Despi′ting, imp. Despi′ted, pp. Despite′ful, a. *-fûl*, full of spite; malicious. Despite′fully, ad. *-lĭ*, maliciously; malignantly. Despite′fulness, n. malice; hate. Despiteous, a. *dĕ-spīt′ĕ-ŭs*, in *OE.*, full of hatred; furious. Despit′eously, ad. *-lĭ*, in *OE.*, in a manner full of hatred.

DESPOIL, v. *dĕ-spoyl'* [OF. *despoiller*, to despoil—from L. *despolĭārĕ*, to despoil—from *de*, *spolĭō*, I deprive of, I plunder]: to take from by force: to rob; to plunder; to divest. **DESPOIL'ING**, imp. **DESPOILED'**, pp. *-spoyld'*. **DESPOIL'ER**, n. one who. **DESPOLIATION**, n. *dĕ-spō'lĭ-ā'-shŭn*, the act of plundering; a stripping or robbing.

DESPOND, v. *dĕ-spŏnd'* [L. *despondērĕ*, to promise, to lose courage—from *de*, *spondĕō*, I promise, I give good hopes for the future]: to nearly give up hopes; to be cast down; to lose courage; to be depressed; to begin to lose hope;—*despair* implies a total loss of hope, *despond* does not. **DESPON'DING**, imp.: ADJ. sinking in spirit; becoming hopeless. **DESPON'DED**, pp. **DESPON'DINGLY**, ad. *-lĭ*. **DESPON'DER**, n. one who. **DESPON'DENT**, a. low-spirited; losing courage with the loss of hope. **DESPON'DENCY**, n. *-dĕn-sĭ*, or **DESPON'DENCE**, n. *-dĕns*, cessation of effort with the loss of hope and courage; dejection of the mind; melancholy. **DESPON'DENTLY**, ad. *-lĭ*, almost without hope.

DESPOT, n. *dĕs'pŏt* [F. *despote*—from mid. L. *despŏtus*—from Gr. *despŏtēs*, a master: It. *despota*]: one ruling or governing without control; an absolute prince; a tyrant. **DESPOT'IC**, a. *-pŏt'ĭk*, or **DESPOT'ICAL**, a. *-ĭ-kăl*, exercising absolute or uncontrolled power; unlimited; unrestrained. **DESPOT'ICALLY**, ad. *-lĭ*. **DESPOTISM**, n. *dĕs'pŏ-tĭzm*, a government with authority unlimited or uncontrolled; the government of an absolute prince; tyranny.—Despotism in anc. classical usage, denoted the form of government which has for its object the interests either of an individual or of a class, to the exclusion of those of the whole community. In the former case, it is usually called a tyranny, which is the degenerate form of monarchy; in the latter it may be either an oligarchy, which is the degenerate form of aristocracy, or an ochlocracy, which is the degenerate form of democracy. A despot is the individual or class in whose favor and for whose benefit such a government is carried on. A despot may thus include any number of persons, from unity upward—from a monarch to a mob. Modern usage applies it mostly to an individual, and with something of opprobrium. See MONARCH: TYRANT: DICTATOR.

DESPUMATE, v. *dĕs'pū-māt* [L. *despumātus*, having removed the froth or scum—from *de*, *spūmo*, I foam: It. *despumare*]: to throw off in foam; to froth. **DES'PUMATING**, imp. **DES'PUMATED**, pp. **DES'PUMA'TION**, n. *-mā'-shŭn*, the act of throwing up froth or scum on the surface of a liquid; the separation of the scum or impurities from a liquid.

DESQUAMATE, v. *dĕs'kwă-māt* [L. *desquamātus*, scaled or peeled off—from *de*, *squāma*, a scale]: to peel off as scales. **DES'QUAMATING**, imp. **DES'QUAMATED**, pp. **DES'QUAMA'TION**, n. *-mā'shŭn*, the act of throwing off scales, as from the skin.

DESSALINES, *dā-sâ-lēn'*, JAQUES, Emperor of the island of Hayti (St. Domingo): imported as a slave into that island from the Gold Coast of Africa; d. 1806, Oct. 17. On the liberation of the slaves, 1794, Feb. 4, he was one of the most prominent of the negroes who rose in insurrection against the white colonists. After the organization of the insurrection, D. occupied the position of first lieut. to the leader Toussaint l'Ouverture, and in the wars against the French troops, was always distinguished by his agility and swiftness of movement, as well as by fearlessness and ferocity. D. submitted, however, and took advantage of the amnesty granted on the capture of Toussaint 1802; but soon headed another insurrection, attacked the French forces, defeated them in the battle of St. Mark, and compelled them to evacuate the island 1803, Oct. He was made gov. 1804, Jan., when the people of the island declared themselves independent; and he caused himself to be crowned as Emperor of Hayti, Oct. 8, same year, under the name of Jaques I.; but his despotism and cruelty soon alienated from him those who had been his firmest adherents. D. was attacked and killed by Christophe, a negro chief, who succeeded him as Emperor Henri I. of Hayti.

DESSAU, *dĕs'sow:* town of n. Germany, cap. of the duchy of Anhalt, on the left bank of the Mulde, not far from its junction with the Elbe, about 80 m. by railway s. w. of Berlin. The country round the town is pleasant and industriously cultivated. D. consists of three parts, the old and new town, and the Sand, and it has besides three suburbs. It is, in general, well built, and one or two of the streets are particularly handsome. Among the principal buildings are the ducal palace, a noble structure, built 1748, with a picture-gallery, and a library containing many MSS. of Luther; a town-hall, an elegant theatre, and several churches and benevolent institutions. Its educational establishments are numerous and excellent. It has a fine cemetery, and the environs comprise beautiful gardens. The manufactures are woolen cloth, hosiery, tobacco, and spirits. Pop. (1880) 23,266.

DESSERT, n. *dĕz-zĕrt'* [F. *dessert*—from *desservir*, to clear the table—from OF. *des* for L. *dis*, apart; L. *servīrĕ*, to serve]: a service of fruit, etc., at the close of a feast or entertainment.

DE STAËL: see STAËL-HOLSTEIN.

DESTERRO, *dĕs-tĕr'rō*, NOSSA SENHORA DO; or SANTA CATHARINA: city, cap. of province of Santa Catharina, Brazil: on island of same name, in lat. 27° 30' s., long. 48° 30' w.; 460 m. s.w. of Rio de Janeiro. It is protected by several forts, has the second-best harbor on the Brazilian coast, irregular streets, some tasteful residences, and a governor's palace, arsenal, court-house, and hospital. It has considerable trade in feathers and artificial flowers. It was nearly destroyed by a water-spout 1828. Pop. 8,000.

DESTINE, v. *dĕs'tĭn* [F. *destiner*, to destine; *destin*, destiny—from L. *destinārĕ*, to make firm, to destine: mid. L. *destĭnă*, a support: It. *destinare*]: to ordain or appoint to a certain use, state, or place; to doom; to appoint or fix unalterably. DES'TINING, imp. DES'TINED, pp. *-tĭnd:* ADJ. doomed; devoted; ordained; appointed unalterably to any state or condition. DES'TINA'TION, n. *-nā'shŭn* [F.—L.]: purpose for which anything is intended or appointed; the end; the ultimate design; a place to which a person is journeying or bound. DES'TINY, n. *-nĭ*, unavoidable fate; lot; future condition appointed by the Divine will, or that appointed by human will. DES'TINIES, n. plu. *-nĭz*, in *anc. myth.*, the three Fates, supposed to preside over human life; the predetermined future state or condition, as of nations.—SYN. of 'destination': design; purpose; intention; lot; fate; doom; destiny; appointment;—of 'destine': to allot; devote; design; intend; consecrate.

DESTITUTE, a. *dĕs'tĭ-tūt* [L. *destĭtūtus*, forsaken—from *de*, *statŭō*, I set or place: F. *destituer*, to dismiss]: forsaken; not possessing; in want of; needy; friendless. DES'TITU'TION, n. *-tū'shŭn* [F.—L.]: utter want; poverty.

DESTROY, v. *dĕ-stroy'* [OF. *destruire*, to destroy—from L. *destru'ĕrĕ*, to destroy—from *de*, *strŭō*, I pile up, I build]: to pull down; to demolish; to ruin; to lay waste; to kill; to put an end to. DESTROY'ABLE, a. *-ă-bl*, capable of being destroyed. DESTROY'ING, imp. DESTROYED', pp. *-stroyd'*. DESTROY'ER, n. one who.—SYN. of 'destroy': to consume; raze; throw down; overthrow; subvert; desolate; devastate; deface; extinguish; extirpate; slay; kill; dismantle.

DESTRUCTIBLE, a. *dĕ-strŭk'tĭ-bl* [F. *destructible*—from mid. L. *destructib'ĭlis*—from *de*, *structus*, piled up or built]: that may be destroyed. DESTRUC'TIBLENESS, n. *-bl-nĕs*, the state or quality of being able to be destroyed; destructibility. DESTRUC'TIBIL'ITY, n. *-bĭl'ĭ-tĭ*, the being capable of destruction. DESTRUC'TION, n. *-shŭn* [F.—L.]: the act of destroying; ruin; demolition; slaughter; death; eternal death. DESTRUC'TIVE, a. *-tĭv*, deadly; fatal; causing destruction; mischievous; wasteful. DESTRUC'TIVELY, ad. *-lĭ*. DESTRUC'TIVENESS, n. the quality of destroying; propensity to destroy.—SYN. of 'destruction': devastation; extermination; desolation; subversion; overthrow; extirpation; extinction; downfall; havoc; slaying;—of 'destructive': ruinous; baleful; pernicious; malignant; mortal; poisonous; malignant.

DESUDATION, n. *dĕs'ū-dā'shŭn* [L. *desūdo*, I sweat greatly—from *de*, *sūdo*, I sweat: F. *désudation*]: a profuse sweating.

DESUETUDE, n. *dĕs'wē tūd* [F. *désuétude*—from L. *desŭētūdo*, disuse]: disuse; the cessation of use; discontinuance of a custom or practice. In the law of Scotland, D. is a technical term signifying that repeal or revocation of a legal enactment which is effected, not by a subsequent enactment in a contrary sense, but by the establishment of a contrary use, sanctioned by the lapse of time and the consent of the community. The corresponding term in English law is *nonuser;* but neither the word nor the idea attached is familiar to that system. The rule in England is, that a statute once formally enacted by the legislature, remains in force, however unsuited to altered conditions, till it be repealed by another statute. The repeal may be by implication, but here the law watches with a jealous eye. Such repeal 'is to be understood,' says Blackstone, 'only when the matter of the latter statute is so clearly repugnant that it necessarily implies a negative. So far was this principle carried, that it was formerly the rule, that if a statute repealing another was itself repealed afterward, the first statute was revived without any formal words for that purpose. But this rule has now been changed. Even where D. is held as a practical repeal of a law, by D. is meant something more than mere non-use for a period of time, however great. There must be contrary use of a positive kind, inconsistent with the statute, and of such a kind as to prove the altered sense of the community; there must, in short, be consuetudinary law in a negative sense; and the so-called desuetude thus amounts to a repeal of statute law by consuetudinary law. Both rules are liable to objections. The result of that followed in England has been, that statutes have remained on the statute-book without formal repeal, after their enforcement had become morally impossible. Of this it may be mentioned, as one single example, that the ancient judicial combat was formally demanded in virtue of an unrepealed statute, and the barbarism had in point of form to be conceded in the present century: see DUEL. But, since 1869, the English statutes have been weeded of all obsolete and inconsistent enactments, and a new edition has been published by authority, containing only such parts as are in force.

DESULTORY, a. *dĕs′ŭl-tėr-ĭ* [L. *desultōrĭŭs*, leaping, inconstant; *desultor*, a leaper, one who leaps from one horse to another—from *de*, *sălĭō*, I leap]: leaping from one thing to another; unconnected; rambling; hasty; loose; without method. **DES′ULTORILY**, ad. *-lĭ*. **DES′ULTORINESS**, n. a passing from one thing to another without order or method; unconnectedness. — SYN. of 'desultory': cursory; loose; summary; roving; discursive; unsettled; inconstant; slight; disconnected; unmethodical.

DESVAUXIACEÆ, n. plu. *dā-vōz-ĭ-ā′sē-ē* [named after M. *Desvaux*, French botanist]: bristleworts, an order of small herbs; natives of the South Sea Islands and New Holland.

DESYNONYMIZE, v. *dē′sĭ-nŏn′ĭ-mīz* [L. *de*, and *synonymous*]: to deprive a word of its synonymous character by attaching to it a specific meaning. **DE′SYNON′YMIZING**, imp. **DE′SYNON′YMIZED**, pp. *-mīzd*.

DETACH, v. *dĕ-tăch′* [F. *détacher*, to unfasten—from F. *dé*, OF. *des* for L. *dis*, apart; F. *tacher*, to fasten: It. *distaccare*, to detach, to untie]: to separate a small part from the main body; to disunite; to part from. **DETACH′ING**, imp. **DETACHED′**, pp. *-tăcht′*. **DETACH′MENT**, n. *-mĕnt* [F.—L.]: the act of detaching; troops or ships, in small but indefinite number, sent for special duties from the main body. **DETACHED WORKS**, in *fort.*, works so far separated from the fortress as to receive no support from its fire.—SYN. of 'detach': to disengage; dissever; disentangle; extricate; sever; disjoin; withdraw; part.

DETAIL, v. *dĕ-tāl'* [F. *détail*, a detail; *détailler*, to divide, to piecemeal—from F. *dé*, L. *de*, fully: F. *tailler*, to cut]: to give particulars, to relate minutely or distinctly; in *mil.*, to appoint men for certain temporary duties: N. *dē'tāl*, a minute or particular account; a narration of particulars. DETAIL'ING, imp. DETAILED', pp. *-tāld'*: ADJ. given in every particular. DE'TAILS, n. plu. *-tālz*, the parts of a thing treated separately and minutely; in *mil.*, the men appointed for certain temporary duties. DETAIL'ER, n. one who details. IN DETAIL, in every particular; circumstantially.—SYN. of 'detail, v.': to particularize; enumerate; appoint;—of 'detail, n.': account; narrative; relation; recital; explanation; narration.

DETAIN, v. *dĕ-tān'* [F. *détenir*—from L. *detinērĕ*, to keep back—from *de*, *tenĕō*, I hold or keep. It. *detenere*]: to keep back from; to withhold; to stop, stay, or delay; to hold in custody. DETAIN'ING, imp. DETAINED', pp. *-tānd'*. DETEN'TION, n. *-tĕn'shŭn* [F.—L.]: act of detaining; a keeping back; confinement or restraint; delay from necessity. DETAIN'ER, n. one who; in *law*, the keeping possession of what belongs to another; a writ authorizing the keeper of a prison to continue to keep a person in custody.—SYN. of 'detain': to hold; arrest; retain; retard; check; withhold; hinder.

DETARIUM, n. *dĕ-tār'ĭ-ŭm* [from *detar*, the native name in Senegal]: genus of leguminous plants, consisting of trees, natives of Senegal. Two species are known. *D. senegalense* furnishes a hard wood resembling mahogany, and two varieties of fruit, one sweet, the other bitter. The former is much sought after for food, but the latter is said to be a strong poison. The succulent drupes of *D. microcarpum* are eaten by the negroes.

DETECT, v. *dĕ-tĕkt'* [L. *detectus*, laid bare—from *de*, *tectus*, covered]: to uncover or lay bare; to find out; to discover. DETEC'TING, imp. DETEC'TED, pp. DETEC'TER, or DETEC'TOR, n. one who or that which. DETEC'TIVE, n. *-tĕk'tĭv*, a police officer not dressed in uniform, whose duty it is to act secretly: ADJ. that detects or discovers. DETEC'TION, n. *-shŭn*, the act of discovering; discovery of a person or thing attempted to be concealed. DETEC'TABLE, a. *-tă-bl*, that may be found out.—SYN. of 'detect': to expose; unfold; uncover.

DETECT'IVES: persons employed for the detection of crime and apprehension of criminals. They are of various classes and include both sexes. Originally they formed a regular branch of the municipal police, and were expected to trace out the unusual crimes and mysteries which ordinary policemen had neither the time nor peculiar skill to undertake. They also constituted a national agency for the prevention and detection of civil and political crimes and intrigues. Many of the most celebrated D. of the world have been, like the noted Vidocq of France, either reformed criminals or particularly skilful rogues who were employed by European governments doubtless on the principle 'set a thief to catch a thief.' In late years, owing to the greater variety of service expected of them, they represent a much higher grade of citizenship, and undergo a special and severe training for their vocation. Their greatest element of success lies in a close intimacy with the criminal classes, their records, habits, haunts, and associates. In the United States there are national, state, municipal, and corporation D. of high repute, beside a number of despicable imposters, without authority to arrest, whose work is chiefly confined to blackmailing and procuring alleged evidence for divorce suits. The U. S. Secret Service is a bureau of D. under the control of the solicitor of the treasury dept., whose officers are employed mainly in looking out for violations of the revenue laws. They also keep a constant watch over the movements of known and suspected counterfeiters, and investigate cases of wrong-doing occurring in any dept. of the federal govt. At every custom-house there is a force, officially known as inspectors, but in reality D., who not only examine the baggage of all individuals coming into the country to ascertain whether they are attempting to smuggle any dutiable articles, but also the persons of such as are suspected of being smugglers. U. S. marshals, of whom there is one for each judicial district, though general officers of U. S. courts, are vested with authority similar to that of sheriffs of counties, and are frequently engaged in purely detective work. In nearly all the states D. are commissioned by the gov. for service within the state either of a general character, where they have a larger jurisdiction than municipal D., or of a special character, where their authority is confined to a specified region. Among the latter are the D. employed by the great railroad companies, the most of whom, however, hold both forms of commission, as their work is liable to take them considerable distances from the line of their respective roads. There are also several large and reputable detective agencies, like the one established by Allan Pinkerton 1850, which have been organized under some special state act of legislature, and which by means of subordinate agencies elsewhere can track a criminal over the entire world and legally apprehend him in any civilized country, provided that under existing treaties he is extraditable for the offense charged. In very large U. S. cities bureaus of D. are established in connection with police depts., and constitute an invaluable means of protecting the life and property of citizens and insuring the community against sudden outrages by local or wandering desperadoes. The members become specialists, and are assigned to duty accordingly. Some are charged with keeping anarchists and persons of their ilk under control; others are made responsible for the presence of certain grades of swindlers and minor rascals, and take care to keep them out of their jurisdiction; and others again are stationed in the vicinity of the great banking institutions, at the large depots, wharves, places of amusement, and wherever large crowds are apt to congregate. A skilled detective on seeing the body of a person who has been foully dealt with and its surroundings at the time, a safe that has been blown open, a house that has been robbed, or other evidence of a crime, is able to determine with approximate correctness whether the act was committed by a novice or a professional, and, if the latter, the gang that he belonged to, his confederates, and probable hiding-place.

DETENT, n. *dĕ-tĕnt′* [L. *detentus*, kept back, detained—from *de, tentus*, held]: a stop in a clock.

DETENTION: see under Detain.

DÉTENU, n. *dĕt′ĕn ŭ* [F. *détenu*, detained]: a prisoner. **Détenus**, n. plu. *dĕt′ĕn-ūz*, prisoners.

DETER, v. *dĕ-tėr′* [L. *deterrērĕ*, to frighten from anything—from *de, terrĕō*, I frighten]: to hinder by fear; to discourage by considerations of danger, difficulty, or great inconvenience. **Deter′ring**, imp. **Deterred′**, pp. *-tėrd′*. **Deter′ment**, n. *-mĕnt*, the act or cause of deterring; that which deters. **Deter′rent**, a. having the power or tendency to deter: N. that which deters.

DETERGE, v. *dĕ-tėrj′* [F. *déterger*, to clean a wound—from L. *detergērĕ*, to wipe off—from *de, tergĕō*, I wipe clean. It. *detergere*]: to cleanse a sore. **Deterg′ing**, imp. **Deterged′**, pp. *-tėrjd′*. **Deter′gent**, a. *-tėr′jĕnt* [L. *detergens* or *detergen′tem*]: cleansing: N. that which cleanses. **Deter′sive**, a. *-sĭv* [L. *detersus*, wiped off]: having power to cleanse: N. a medicine which has the power of cleansing sores. **Deter′sion**, n. *-shŭn*, the act of cleansing, as a sore.

DETERIORATE, v. *dĕ-tē′rĭ-ō-rāt* [mid. L. *detĕrĭōrātus*, made worse—from L. *detĕrĭŏr*, worse: F. *détériorer*, to waste]: to grow worse; to make worse; to reduce in quality; to degenerate. **Dete′riorating**, imp. **Dete′riorated**, pp. **Dete′riora′tion**, n. *-rā′shŭn* [F.—L.]: the state of growing worse; a becoming or making worse.

DETERMINE, v. *dĕ-tėr′mĭn* [F. *déterminer*—from L. *determinārĕ*, to border off; *determĭnātus*, bordered off, bounded—from *de, termĭnus*, a boundary or limit: It. *determinare*]: to bound or border off; to end; to fix; to decide; to influence the choice; to resolve; to come to a decision. **Deter′mining**, imp. **Deter′mined**, pp. *mĭnd:* Adj. having a settled or fixed purpose; firm; resolute; definite. **Deter′minable**, a. *-mĭn-ă-bl*, that may be decided with certainty. **Deter′minant**, serving or causing to determine; in *math.*, sum of a series of such products of several numbers as are formed according to certain specified laws; the theory of determinants is a new and useful method in the solution of equations embracing several unknown quantities—enabling the student readily to state the values of all the unknown quantities in terms of the known. **Deter′minator**, n. one who; also **Deter′miner**, n. one who. **Deter′minedly**, ad. *-lĭ*. **Deter′minate**, a. *-āt*, limited; fixed; settled; resolute: V. in *OE.*, to limit; to fix. **Deter′minately**, ad. *-lĭ*. **Deter′minateness**, n. **Deter′mina′tion**, n. *-nā′shŭn* [F.—L.]: the act of determining; firm resolution; fixed purpose; judicial decision; a putting to an end; a too rapid or copious flow of blood to a particular part of the body. **Deter′mina′tive**, a. *-nā′tĭv*, that limits or bounds; having the power of directing, limiting, or fixing. DETER'MINISM, n. *-mĭn-ĭzm*, philosophical theory which denies the freedom of the human will, affirming that all seeming volition is actually necessitated, and that 'the act of the soul is itself only a movement of the universal transformation of the dynamical forces of nature' (see FREE-WILL).—SYN. of 'determine': to resolve; limit; bound; finish; shape; regulate; settle; impel; direct; conclude;—of 'determination': decision; judgment; conclusion; purpose; firmness; resolve; termination; direction; tendency; resoluteness.

DETERRED, DETERRING: see under DETER.

DETERSIVE, DETERSION: see under DETERGE.

DETEST, v. *dĕ-tĕst'* [F. *détester*—from L. *detestārī*, to call earnestly to witness, to abominate—from *de*, *testor*, I bear witness: It. *detestare—lit.*, to invoke a deity as a witness against]: to abhor; to hate extremely; to abominate. DETES'TING, imp. DETES'TED, pp.: ADJ. hated extremely. DETES'TER, n. one who. DETES'TABLE, a. *-tă-bl* [F.—L.]: abominable; extremely hateful. DETES'TABLY, ad. *-blĭ*. DETES'TABLENESS, n. *-bl-nĕs*, the quality of being detestable; extreme hatefulness. DETESTATION, n. *dē'tĕs-tā'shŭn* [F.—L.]: abhorrence; extreme hatred.—SYN. of 'detest': to loathe; hate; execrate; condemn;—of 'detestable': odious; execrable; abhorred.

DETHRONE, v. *dĕ-thrōn'* [OF. *desthroner*, to unthrone—from OF. *des* for L. *dis*, apart—from L. *de*, *thrŏnus;* Gr. *thronos*, a royal seat]: to drive from a throne; to divest of supreme power. DETHRO'NING, imp. DETHRONED', pp. *-thrōnd'*. DETHRO'NER, n. one who. DETHRONE'MENT, n. *-mĕnt*, the removal from a throne; deposition from regal power.

DETINUE, n. *dĕt'ĭ-nū* [F. *détenu*, held back—from *détenir*, to hold back, to withhold—from L. *detinĕō*, I keep back]: in *law*, action or writ against a person for recovery of goods wrongfully detained in his possession, or of their value, with damages and costs. The action is for the recovery of a specific article; the goods detained must, therefore, be of such a character that they can be distinguished from others, as a horse, money in a bag, etc. In this respect, the action of D. differs from an ordinary action at law, and judgment in D. is accompanied by its special remedy for enforcing execution—called writ of *Distringas.* There must actually be a title of property in the plaintiff at the time he brings his action; but property without possession is sufficient, and an heir can thus bring his action for an heir-loom which has never been in his possession. This action was formerly subject to *Wager of Law* (q.v.), now abolished, whereby the defendant was allowed to clear himself by his own oath, supported by that of eleven neighbors. This proceeding rendered the action of D. so inconvenient, that, by a fiction of law, remedy for wrongful detention was most frequently sought by the action of *Trover* (q.v.).

DETMOLD, *dĕt'mōld*, Ger. *dĕt'mōlt:* town of n.w. Germany, on the Werre, cap. of the principality of Lippe-

Detmold, 47 m. s.w. of Hanover. It consists of an old and new town, the latter of which is well built, and adorned with public walks and gardens. The chief buildings are the palace, a fine old castellated edifice, the gymnasium, and the theatre. D. has also a training-school, public library, and hospital. The manufactures are leather, woolens, and linens. There are.several breweries. On the Grotenburg, about 2 m. from D., is a colossal copper statue of Hermann (q.v.). Pop. (1880) 8,053.

DETONATE, v. *dĕt'ō-nāt* [L. *detonātus*, thundered down—from *de*, *tono*, I thunder: F. *détoner*]: to cause to explode with a sudden report; to burn with a loud noise. DET'ONA'TING, imp. DET'ONA'TED, pp. DET'ONA'TION, n. *-nā-shŭn* [F.—L.]: the phenomenon of combustion with explosive rapidity, accompanied by sound and light; e.g., the firing of gunpowder, gun-cotton, and fulminating-powders, as in a percussion-cap. DETONATOR, n. *dĕt'ō-nā'-tėr*, that which explodes with a sudden report; a gun fired with a percussion-cap.

DETORTION, n. *dĕ-tŏr'shŭn* [L. *detorsus*, turned or bent aside—from *de*, *torsus*, twisted]: a turning or wresting; perversion from the true meaning.

DETOUR, n. *dĕ-tôr'* [F.]: a roundabout; a circuitous way.

DETRACT, v. *dĕ-trăkt'* [F. *détracter*—from L. *detractus*, taken away—from *de*, *tractus*, drawn—*lit.*, to take or draw away]: to lessen reputation by calumny; to damage character by speaking evil of; to disparage; to traduce. DETRAC'TING, imp.: ADJ. having a tendency to detract. DETRAC'TED, pp. DETRAC'TOR, or DETRAC'TER, n. *-tėr*, one who. DETRAC'TION, n. *-trăk'shŭn* [F.—L.]: the depreciating of the reputation of another from envy, malice, or other motive; a lessening of worth; censure; slander—also DETRACTA'TION, n. *-tā'shŭn*. DETRAC'TIVE, a. *-tĭv*, having the tendency to lessen worth or estimation. DETRAC'TINGLY, ad. *-lĭ*. DETRACTORY, a. *dĕ-trăk'tėr-ĭ*, tending to lessen the worth or estimation in which a person or thing is held.—SYN. of 'detract': to derogate; defame; slander; abuse; asperse; depreciate; decry; calumniate; vilify;--of 'detraction': calumny; disparagement; depreciation; derogation; aspersion; censure.

DETRIMEMT, n. *dĕt'rĭ-mĕnt* [F. *détriment*—from L. *detrimen'tum*, loss—from *de*, *trītus*, worn or rubbėd: It. *detrimento*]: damage; loss; injury; disadvantage; diminution. DET'RIMEN'TAL, a. *-tăl*, injurious; hurtful; pernicious.—SYN. of 'detriment': disadvantage; prejudice; mischief; harm; hurt; injustice; wrong.

DETRITUS, n. *dĕ-trī'tŭs* [L. *detrītus*, worn]: any accumulation of earth, sand, gravel, clay, and fragments of rock, formed by the wearing away and disintegration of rocks; *debris* consists of masses of rock, gravel, sand, trees, animal remains, etc., having the same meaning with the word *rubbish*. DETRI'TAL, a. *-trī'tăl*, composed of detritus. DETRITAL ROCKS, n. plu. rocks that appear to have been derived from the detritus of preëxisting solid mineral matter. DETRITI'ON, n. *-trĭsh'ŭn*, the act of wearing away.

DETROIT, *dĕ-troyt':* city, cap. of Wayne co., Mich.: port of entry and metropolis of state; on D. river opposite Windsor, Canada; 7 m. below Lake St. Clair, 18 m. above Lake Erie, 80 m. e.s.e. of Lansing, 225 m. w. by s. of Buffalo, 250 m. e. by n. of Chicago; lat. 42° 19′ 53″ n., long. 82° 58′ w. The river, which at this point is the dividing line between the United States and Canada, is ½ m. wide, 32 ft. deep, has a velocity of 2 m. per hour, and forms the best harbor on the lakes. Its entire length is 20 miles, it varies from ½ to 2 m., and at its mouth 5 m., in width, and from 25 to 60 ft. in depth. The channel, 1 m. below D., is commanded by Fort Wayne. The site of the city is sufficiently elevated above the river to afford excellent facilities for drainage, which have been thoroughly improved.

D. extends nearly 7 m. along the bank of the river, and nearly 3 m back from it, and its entire front is occupied with warehouses, elevators, mills, foundries, shipyards, drydocks, and railroad stations. It is laid out according to what is known as the 'Governor's and Judges' Plan,' by which the Campus Martius, the square on which the city hall and soldier's monument now stand, was selected as one centre, and a circular park, called the Grand Circus, was selected as another, and from these were projected grand avenues, radiating in different directions, and intersected by streets running in concentric circles. Only one-half the original Grand Circus was dedicated to public use, and this semicircular park, as well as the Campus Martius, ⅛ m. distant, is bisected by Woodford avenue. The streets and avenues vary from 60 to 200 ft. in width, about 80 ft. being the average, are almost entirely lined with handsome shade trees, and the widest of them have charming stretches of lawn between the paved roadway and the sidewalks. The principal streets are Jefferson avenue, parallel to the river; Woodward avenue, beginning at the river and dividing the city into two equal parts; Griswold street, the Wall street of D., short, with the river at one end and the high school building at the other; Grand river, Gratiot, and Michigan avenues, business arteries leading to the interior of the state; Fort street; Lafayette, Washington, and Cass avenues, lined with costly residences surrounded by beautiful grounds. There are no great parks in the city, but numerous small spaces are tastefully laid out, provided with seats, and some with fountains.

The first works for the distribution of water through the city were erected at the foot of Rivard street, and the mains cost $1,221,752. Water was pumped from the channel of the river by three steam engines, with an aggregate capacity of 32,000,000 gallons daily, into a reservoir holding 10,000,000 gallons, and thence distributed through 160 m. of pipe. New works were opened 1878 about 3 m. above the city, which draw their supply through a large pipe sunk in the bed of the river, directly from Lake St. Clair, at a point where there is no possibility of future contamination. The water passes through an immense settling basin and is distributed by 42-in. mains. At the close of 1883, 241 m. of pipe had been laid, the cost of construction of the water-works amounted to $3,315,989, and they carried a bonded debt of $1,555,000. Perfect drainage is secured by the construction of collecting sewers in all streets leading to the river, and laterals connected therewith in all cross streets. The surface of the ground having a rise of 85 ft. in the first m. from the river, a sufficient fall is provided naturally to carry off all sewage.

The city is lighted by gas and electricity; has a paid fire dept., with apparatus worth $475,000; a metropolitan police force, with a central and 9 sub-stations; 8 lines of street and one of transit railway; and stations for 12 lines of railroad, of which the Great Western of Canada, Grand Trunk, Canada Southern, Mich. Central, Lake Shore and Mich. Southern, D. and Milwaukee, D. Lansing and Lake Mich., D. and Bay City, Wabash Flint and Pere Marquette, and D. Hillsdale and Southwestern, are most important. The freight dept. of the Mich. Central railroad is a notable structure, having a single apartment 1,250 ft. long and 102 ft. wide, covered by a self-supporting iron roof; and the roundhouse of the same road is remarkable from having the next largest dome after that of the national capital, beneath which 16 locomotives can stand at one time. In 1885 a considerable portion of the suburbs was added to the area of the city.

D. is not only the centre of an extensive railroad system, but is also the focal point of a vast marine service; its proximity to Canada and Lakes Erie and St. Clair enabling it to carry on a very large export trade. There are 10 different steamboat lines, with about 100 boats running between it and various points on the lakes, besides many more sailing vessels. The city is thus provided with two great outlets for its vast volume of manufactures, as well as for the products of an immense section of the finest agricultural lands in the world. During the year ending 1886, Sep. 30, the exports amounted in value to $4,283,310, mainly to Canada, but some direct to Liverpool; imports $3,070,849. In 1880 there were 919 manufacturing establishments, using a capital of $15,504,479, employing 16,110 persons, paying $6.306,460 in wages, and yielding products valued at $30,181,416. Omitting 59 establishments of miscellaneous industries which employed a capital of $2,842,496, paid in wages $971,185, consumed materials valued at $2,222,470, and yielded products valued at $3,971,730, the chief industries ranked by value of products were: iron and steel, establishments 7, capital $1,547,386, wages $436,986, materials $1,872,407, products $2,498,634; men's clothing, establishments 31, capital $963,500, wages $389,926, materials $1,364,016, products $2,056,182; foundries and machine shops, establishments 24, capital $1,262,050, wages $431,065, materials $915,955, products $1,808,355; slaughtering and wholesale meat packing, establishments 7, capital $485,000, wages $79,067, materials $1,413,426, products $1,721,231; flour and grist mills, establishments 14, capital $497,000, wages $62,795, materials $1,438,752, products $1,649,627; and tobacco, chewing, smoking, and snuff, establishments 5, capital $495,000, wages $100,725 materials $719,554, products $1,212,146; tobacco, cigars, and cigarettes, establishments 58, capital $453,700, wages $310,828, materials $572,080, products $1,196,870. The miscellaneous industries include locomotive and car works, which yielded products valued at $7,000,000, 1886; stove works (1886), $2,500,000; a variety of other works in iron, bringing total capital employed (1886) in the iron industry to $5,000,000; breweries, distilleries, and malt houses; brick-yards; copper-smelting works; and furniture and other articles of wood.

The assessed valuation of the city, 1884, July 1, was $110,721,995; bonded debt, $1,056,500, with a sufficient sinking-fund to extinguish it. 1886, July 1, the valuation had increased to $133,448,580, and the net debt was $36,490. In the intervening year, $3,103,873 were invested in new buildings, and nearly the same amount in repairs and improvements. In 1888 there were eight national banks with an aggregate capital of $4,000,000, 12 state banks, capital $2,200,000, 4 private banks, capital (2 rated) $95,000, and a trust and deposit company, capital $30,000. The churches and chapels numbered 126, and were distributed denominationally as follows: Prot. Episc., 24; Rom. Cath. 21; Meth. Episc., 17; Bap. and German Evang., Lutheran, each, 13; Presb., 12; Congl., 7; Jewish, 5; German Evang., 4; and Dutch Ref., Ref., Ref. Episc., Unitarian, Central Church of Christ, Church of Christ, Disciples of Christ, German Evang. Assoc., New Jerusalem, and Unity (undenom.), each, one. St. Anne's (Rom. Cath.) Church is the oldest edifice of its kind in the state, is built of stone with two wooden spires, has an elaborately painted ceiling, is noted for its fine choir, and its services, other than Latin, are conducted in the French language. The Cathedral of Saints Peter and Paul (Rom. Cath.) is the largest church edifice in the state, and has a remarkably rich interior. St. Paul's (Prot. Episc.) Church is the oldest church of that denomination in the state, is built of stone, has a beautiful interior, and is notable for the absence of any pillars, the elegant roof being one of the most famous self-sustaining roofs in the country. Christ, St. John's, and Grace churches, also Prot. Episc., are handsome structures. The Fort Street Presb. Church is a splendid specimen of pure Gothic architecture, and is credited with possessing the handsomest façade of all the churches. Beside it, the First Presb., and the Jefferson Av. Presb. churches are attractive in architecture and decoration. The Central (Meth. Episc.) Church has a very ornate and costly interior.

The public school system is progressive, soundly established, and liberally supported. With one exception all the schools are graded as primary, grammar, and high; the ungraded one was established 1883 for truants and incorrigibles. Reports for the fiscal year 1884–5 showed: value of grounds and sites, $251,450; school buildings, $715,500; furniture, $30,000; apparatus and libraries, $5,000; total, $1,001,950. There were 31 school buildings; 315 teachers; 45,641 children of school-age; 18,933 enrolled, and 13,450 in average daily attendance. The seating capacity of all the public schools aggregated 15,429. The High School building occupies a triangular plot of ground at the head of Griswold Street, and is in three sections, the central one having been the first capitol of the state, which was transformed into a school after the capitol was removed to Lansing, and which, as additional room became necessary, was enlarged, first by an addition to the rear, and subsequently by covering the entire lawn which was formerly in front of the capitol with a new building. A diploma granted by the high school entitles the holder to all the privileges of the Univ. of Mich. without further examination. Beside the pupils in the public schools, there was an estimated enrollment of 8,378 in private and parochial schools. There are also the D. Medical College (established 1868), D. Homœopathic College (1871), a German-American seminary, a German Lutheran school, and several Rom. Cath. schools. D. has four libraries, a public one with about 60,000 vols.; Young Men's Society, with about 30,000; Young Men's Christian Assoc., which includes that of the old Mechanics' Society, and a law library with nearly 7,000 standard works.

The public buildings of note are the city hall, a fine structure on the Campus Martius, facing upon four streets, 200 ft. long and 90 ft. deep, and erected at a cost of $600,000; the house of correction, a model institution with a more than national fame, capacity 600. cost $400,000; the U. S. custom house, with accommodations for the internal revenue officers, the U. S. lake survey officers, the officers in charge of the lake lighthouses, and the officers of the military dept. of the lakes; a post-office building in course of erection at a cost of $900,000; an opera house, and board of trade building. The charitable institutions include Harper Hospital, Home of the Friendless, House of Providence, Infant Asylum and Lying-in Hospital, Ladies' D. Industrial School, Little Sisters of the Poor (Rom. Cath.), Lutheran Deaf and Dumb Asylum, Mich. Retreat (insane asylum), Prot. Orphan Asylum, St. Anthony's Male Orphan Asylum (Rom. Cath.), St. Luke's Hospital and Church Home (Prot. Episc.), St. Mary's Hospital (Rom. Cath.), St. Vincent's Orphan Asylum (Rom. Cath.), Thompson Home for Old Ladies, Hebrew Widows' and Orphans' Home, Women's Hospital and Foundling Asylum, and U. S. Marine Hospital. D. contains the Mich. soldiers and sailors' monument, of bronze and granite, cost $75,000, from designs by Randolph Rogers, and erected in the square fronting the city hall; eight cemeteries, of which Elmwood, Mount Elliott, and Woodmere are the most beautiful; eight daily newspapers, and 46 other publications.

The site of D. was visited by the French 1610, and permanently settled by French colonists under De la Motte Cadillac 1701, when Fort Ponchartrain was built as a defense against Indians. Owing to its great stragetic importance it has never been without a military garrison since 1701. It has changed its flag five times; was at times under French and English dominion prior to the Revolutionary war; has owed allegiance to three different sovereigns; has been besieged by Indians twice, captured in war once, totally consumed by fire once, and has been the scene of 12 massacres and 50 battles. The English took possession of it 1763, and erected (1778) Fort Shelby, the site of which is now in the heart of the city. It was ceded to the United States by the peace of 1783, but possession was not taken till Gen. Arthur St. Clair established himself there, 1796; Gen. Hull surrendered it to the British 1812; and the Americans regained possession after Com. Perry's victory on Lake Erie, 1813. The present city was laid out 1807, incorporated as a village 1815, chartered as a city 1824, and was capital of the state 1837–47.

Pop. (1810) 770; (1820) 1,442; (1830) 2,222; (1840) 9,102; (1850) 21,019; (1860) 45,619; (1870) 79,577; (1880) 116,340; (1884) 132,956; (1886) 219,192.

DETROIT RIVER: St. Lawrence which discharges Lake St. Clair into Lake Erie. With a s.s.w. course, it forms the lowest section of that mighty body of waters before it assumes its n.e. direction toward the Gulf of St. Lawrence. D. river is about 28 m. long, with a minimum breadth of fully half a mile. Though the middle of its length is barely above the 42d parallel—about 550 m. s. of any point in England—yet it is frost-bound about four months in the year. It is navigable for vessels of any burden, the deeper channel being on the Canadian shore.

DE TROP, phrase, *dėh trō* [F., too much, too many]: in the way; not wanted; applied to a person whose company is inconvenient or not wanted; one too many.

DETRUDE, v. *dĕ-trôd'* [L. *detrūdĕrĕ*, to thrust or push down—from *de*, *trūdo*, I thrust: It. *detrudere*]: to thrust down; to push down with force. DETRU'DING, imp. DETRU'DED, pp. DETRU'SION, n. *-zhŭn* [L. *detrūsus*, thrust or pushed]: a thrusting or forcing down.

DETRUNCATE, v. *dĕ-trŭng'kāt* [L. *detruncātus*, lopped or cut off—from *de*, *trunco*, I cut or lop off: It. *detroncare*]: to lop or cut off; to shorten by cutting. DETRUN'CATING, imp. DETRUN'CATED, pp. DETRUNCATION, n. *dē'trŭng-kā'shŭn*, the act of cutting or lopping off abruptly.

DETTINGEN, *dĕt'tĭng-ėn*, BATTLE OF: in the Austrian wars of succession; 1743, June 27. Dettingen is a village of Bavaria, Lower Franconia, on the right bank of the Main. Here George II. (q.v.) of England, commanding abt. 37,000 English and Hanoverians, defeated the French army, abt. 60,000, under the Duke de Noailles. This was the last time a king of England took the field in person.

DETVA, *dĕt'vŏ:* town in the n.w. of Hungary, in a deep valley, 20 m. e. of Altsohl. Pop. (1880) 10,320.

DEUCALION, n. *dū-kā'lĭ-ŏn:* in *Gr. myth.*, a king in Thessaly, son of Prometheus (q.v.), and husband of Pyrrha. When Zeus had resolved to destroy the race of men by a flood, D. built an ark or ship. The flood came. D. floated about for nine days, and on the subsidence of the waters, the ark rested on Mount Parnassus. To repeople the world, D. and Pyrrha were told by the goddess Themis to throw behind them the bones of their mother. Understanding by this the stones of the earth, they obeyed the injunction, and from those thrown by D. sprang up men, and from those by Pyrrha, women. The myth, a comparatively late one, not alluded to by Homer or Hesiod, is no longer deemed by scholars to be a corrupted tradition of the Noachian deluge.

DEUCE, n. *dūs* [OF. *deus* or *dous;* F. *deux*, two—from mid. L. *duos* for *duo*, two: Ger. *daus*, deuce]: in *gaming*, a two; a card or die with two spots.

DEUCE, or **DEUSE**, n. *dūs* [*Dusĭŭs*, the name of a Gallic demon: Low Ger. *duks* or *duus*, the deuce: comp. Gael. *duis*, gloom]: a euphemism for the devil; a demon; an evil spirit. **DEUCED**, a. *dū'sĕd*, excessive; extreme: AD. excessively; extremely. **DEU'CEDLY**, ad. *-lĭ*. *Note.*—Skeat says that DEUCE is merely an old Norman oath, vulgarized: OF. *Deus*, O God ! Dut. *deus*, the deuce.

DEUS EX MACHINA, *dē'ŭs ĕxs măk'ĭ-na:* an expression borrowed from the classical theatre. In conformity with the popular mythological beliefs of their age, the tragic poets of Greece, instead of bringing about the dénouement of their plots by natural means, had often recourse to a more expeditious mode—viz., the intervention of a god, who descended in a machine, and abruptly solved whatever difficulty barred the proper termination of the piece. As examples of the *Deus ex Machina*, take the appearance of Hercules in the *Philoctetes* and of Diana in the *Iphgienia in Tauris*. In modern tragedy, when a person or incident is introduced arbitrarily, *forced*, as it were, into the conduct of a plot, merely to remedy some inartistic negligence in its construction, or to save the author the labor of further ingenuity, such a contrivance is metaphorically called a *Deus ex Machina*. In modern comedy, the rich old uncle who suddenly comes home from the W. Indies, and rescues the young hero and heroine from their dreadful pecuniary embarrassment, serves the same purpose. In philosophy, a needless recourse to a direct and special Divine intervention in accounting for results, has been termed a *Deus ex Machina*.

DEUTERO, *dū'tėr-ō*, or **DEUTO**, *dū'tō* [Gr. *deutĕros*, second]: a prefix which indicates the second degree of the word with which it is joined.

DEUTERO-CANONICAL, a *dū-tėr-ŏ-ka-nŏn'ĭk-al:* term applied to those books of Scripture which were admitted as canonical after the rest.

DEUTEROGAMY, n. *dū'tėr-ŏg'ă-mĭ* [Gr. *deutĕros*, second; *gamos*, marriage]: a second marriage after the death of the first husband or wife. **DEU'TEROG'AMIST**, n. *-ă-mĭst*, one who.

DEUTEROGENIC, a. *dū'tėr-ō jĕn'ĭk* [Gr. *deutĕros*, second; *gĕnos*, birth, race]: in *geol.*, applied to those rocks which have been derived from the *protogenic* rocks by mechanical action.

DEUTERONOMY, **BOOK OF**, *dū'tėr-ŏn'ŏ-mĭ* [Gr.

deutĕros, second; *nomos*, a law]: received generally as one of the Five Books of Moses. Certain 'modern critics' (arguing from differences of style, and other marks which they claim to find in the five books) maintain that all of them, in their present form, were produced at some late period of the Jewish monarchy. These critics, by their divisions among themselves tend to neutralize their own conclusions. Aside from their questions of style the following is THE CHAIN OF HISTORICAL PROOF that Deuteronomy was written by Moses in the period of the wilderness wanderings. 1. The Jews hold now, and have held during all the Christian centuries, this book in its original Hebrew language, as written by Moses. 2. At the Christian era, in the synagogues of the various cities of the Roman empire the book was read, and had been read of old, in its turn, every Sabbath day, as part of the law of Moses. 3. In the reign of Antiochus (about B C. 170) his soldiers, entering the temple at Jerusalem, profaned the book of the law by painting therein idolatrous images; and, by the king's command, they tore up and burned other copies of the book wherever they found them. 4. A century earlier (B.C. 280–250) learned Jews translated the five books of the law into Greek. This translation proves the previous existence of Deuteronomy, and its authority among the Jews as a part of the law of Moses. 5. About two centuries earlier (B.C. 457) Ezra, known at Babylon as a ready scribe of the law of Moses, went to Jerusalem and, with Nehemiah's aid, remodelled the affairs of the Jews in accordance with the law. For the furtherance of this work he brought the book of the law and read it to the assembled people from morning to noon for seven successive days. 6. About 170 years earlier (B.C. 624), after idolatrous abominations had desolated the temple for 75 years, King Josiah undertook to restore it. Hilkiah the high-priest, who had charge of the work, entering the temple brought out from it the book of the law. The king had it all read to him—Deuteronomy being the part which especially filled him with sorrow and fear. He then assembled the people and read to them the whole book; after which he continued the work of purification, 'turning to the Lord with all his heart and soul and might according to the law of Moses. 7. One hundred years earlier (B.C. 726) Hezekiah, becoming king after a period of idolatry, restored the true religion; 'kept the commandments which the Lord commanded Moses;' and 'prayed for the people' who were not able to comply fully and in time with the *written commandment*. 8. A century earlier (B.C. 860) King Amaziah put to death the muderers of his father, but spared their children according to 'the law written in the book of Moses where (in Deuteronomy) the Lord commanded, saying: "The children shall not die for their fathers."' 9. About two centuries earlier (B.C. 1015), David charged Solomon to keep the commandments of God; 'as it is written in the law of Moses (in Deuteronomy) "that thou mayest prosper in all that thou doest."' And, twenty-five years earlier, he arranged the tabernacle service as

Moses commanded 'according to all that was written in the law of the Lord.' 10. Three centuries earlier (B.C. 1312), when Boaz married Ruth the Moabitess, the law appealed to in justification of his course, and publicly recognized as having established the custom of the land, was one written in Deuteronomy; and, so far as appears, there only. 11. More than a century earlier (B.C. 1426), after the conquest of Canaan, Joshua, gathering all the people together, charged them 'to be very courageous in keeping and doing all that is written in the book of the law of Moses;' quoting to them again and again, commandments from Deuteronomy. 12. Twenty-five years earlier (B.C. 1451), in the year of the entrance into Canaan, Joshua arranged the people half on Mount Ebal, and half on Mount Gerizim, as Moses (in Deuteronomy) had commanded. He read to them 'the blessings and the cursings according to all that is written in the book of the law. There was not a word which Moses commanded that Joshua did not read before all the congregation.' 13. In the same year Moses, one month before he died, having, on several occasions, gathered all the people together, spake to them, and wrote for them the histories, laws, threatenings, and blessings which make up very nearly the whole of Deuteronomy. Then, delivering the book to the Levites, he commanded them to place it by the side of the ark. The brief record of his death and burial, the delineation of his character, and the announcement of his successor are simply a postscript by another hand. 14. Received thus and held by the Jews from the day it was written to the present hour, Deuteronomy is held by Christians as attested also by the supreme authority of Christ; since, in repelling the tempter in the wilderness, he quoted from it as the written word of God.

DEUTEROSCOPY, n. *dū-tėr-ŏs'ko-pĭ* [Gr. *deutĕros*, second; *skopeō*, I see, I look at]: the second, inner, or hidden meaning of words.

DEUTEROZOOIDS, n. plu. *dūt'ėr-ō-zō'oyds* [Gr. *deutĕros*, second; *zōŏn*, an animal; *eidos*, resemblance]: those zooids which are produced by gemmation from zooids.

DEUTHYDROGURET, n. *dūt-hĭ-drŏg'ū-rĕt*, or Deutohydrog'uret, n. *dū-tō-* [Gr. *deutĕros*, second; Eng. *hydroguret*]: compound of two atoms of hydrogen with one of some other element.

DEUTOPLASM, n. *dū'tō-plăzm* [Gr. *deutĕros*, second; *plasma*, what has been formed]: in *biol.*, the nutritive or food yolk as distinguished from the germinal or protoplasm.

DEUTOXIDE, n. *dū-tŏks'īd* [Gr. *deutĕros*, second, and *oxide*]: in *chem.*, a substance oxidized in the second degree —now more generally *dioxide*.

DEUTSCH, *doytsh*, Emanuel Oscar: 1829–73; b. Neisse, in Silesia; of Jewish parentage. His education, begun by an uncle, to whom he owed his mastery of the whole range of Hebrew and Chaldee literature, was finished at the Univ. of Berlin. In 1855, he came to England to fill an appointment in the National Library; and from this time was known for his labors in the British Museum, and his efforts to promote the study of the Semitic languages. He is best known to the outside world by his brilliant article on the *Talmud* in the *Quarterly Review*, to which he also furnished an article on *Islam*. He wrote excellent articles on the *Targum* and the *Samaritan Pentateuch* for Dr. Smith's *Dictionary of the Bible*, and was a valued contributor to *Chambers's Encyclopædia*, for which he wrote nearly 200 articles. The best monument of his official work in the National Library is to be found in the *Peœnician Inscriptions*, edited by Mr. Vaux, to whom D. rendered most valuable assistance. He died at Alexandria, whither he had gone for health. His engrossing public duties and comparatively short life prevented D. from fulfilling the dream of his life, an elaborate work on the *Talmud*. A volume of his literary remains, with a sketch of his life, was published 1874.

DEUTZ: see COLOGNE.

DEUTZIA, *doyt'zĭ-a:* genus of shrubs of the nat. ord. *Philadelphaceæ;* natives of the n. of India, China, and Japan. Some are favorite green-house plants in Britain and America. They produce abundance of beautiful white flowers.

DEUX-PONTS, *dėh-pōng'* (Ger. *Zweibrücken*): town of Rhenish Bavaria, on the Erbach, near the Lorraine frontier. D. owes its name to its two bridges. Its ancient ducal palace is now used as a court-house. The Latin form of D. was Bipontium; whence the name Bipontine given to the edition of Greek and Latin classics here printed by a society of scholars in 1779. Pop. (1880) 10,382.

DEV, *dāv*, or DEW (Persian), also DEVA, *dāv'a* (Sanskrit): in Persian, race of demons created by Ahriman and doing his bidding; in Sanskrit, the gods of Hindu mythology.

DEVAPRAYAGA, *dā-vâ-prī-â'gâ* (better *Deoprayag*): town in the dist. of Guhwal, N. W. Provinces of India; in the fork of the Alaknanda and the Bhagiraths, which join to form the Ganges (q.v.). It is 313 ft. above the rivers, and 2,266 ft. above the sea. As in one sense the source of the sacred river Ganges, D. is a favorite place of pilgrimage for the Hindus. Its only permanent pop. consists of abt. 1,000 Brahmins from the Deccan. The town was shattered by earthquake 1803, and was repaired by Scindia, Mahratta chief of Gwalior.

DEVASTATE, v. *dĕv'ăs-tāt* [L., *devastātus*, laid waste—from *de*, *vasto*, I lay waste: It. *devastare:* F. *dévaster*]: to lay waste; to ravage; to destroy. DEV'ASTATING, imp. DEV'ASTATED, pp. DEV'ASTA'TION, n. *-tā'shŭn* [F.—L.]: the act of laying waste; state of being laid waste; havoc; destruction, as by armies, floods, etc.—SYN. of 'devastate': to desolate; waste; pillage; plunder; demolish; ruin; overthrow.

DEVASTAVIT, n. *dē-văs-tā'vĭt* [L. he has wasted]: in *law.*, a writ which lies against an executor or administrator, who wastes or misapplies the goods of a deceased person.

DEVELOP, v. *dĕ-vĕl'ŏp* [F. *développer*, to unfold]: to unfold; to lay open; to disclose; to unravel; in *algebra*, to bring out in full the operations set forth in symbols: in the geometry of curved surfaces, to produce on a plane a surface equivalent. DEVEL'OPING, imp. DEVEL'OPED, pp. *-ŏpt*. DEVEL'OPMENT, n. *-ŏp-mĕnt*, an unfolding; an unravelling; disclosure. DEVEL'OPMEN'TAL, a. connected with or formed by development. DEVELOPMENT, in Photography: see PHOTOGRAPHY. DEVELOPMENT, as in '*theory of development*,' the progressive advancement of life from its lowest types as they first appeared on the earth, or are supposed to have first existed, up to those highest forms of life now existing on the earth, as contradistinguished from acts of direct creation; evolution: see CREATIONISM: DARWINIAN THEORY: DESCENT OF MAN.—SYN. of 'develop': to uncover; lay open; disclose; exhibit; disentangle; detect.

DEVELOPMENT OF THE EMBRYO; or EMBRYOLOGY: that portion of biological science which seeks to investigate 'the anatomy and physiology of the organism during the whole period included between its first coming into being and its attachment in the adult state.' Of Physiological Embryology hardly anything is yet known, but the anatomical division of the subject has been making increasingly rapid progress during the last half-century; more especially since its results and aims received new interest and importance from their relation to the doctrine of evolution: see DARWINIAN THEORY: for the question of vegetable development, see BOTANY: VEGETABLE PHYSIOLOGY: etc. For a more full statement of animal embryology, see F. M. Balfour's classical *Treatise on Comparative Embryology* (2 vols. Lond. 1879–81), on which the present account is based.

The Egg-cell or Ovum.—It is now a familiar fact, that all the cells which go to make up the adult organism are descendants of a single cell, the ovum or egg-cell: see CELL. This direct corollary of the cell theory was formally enunciated by Martin Barry 1838, though long previously expressed in Harvey's famous aphorism, *omne vivum ex ovo*. When this primary cell is stimulated into reproductive activity, i.e., into repeated division, by coalescence with a male cell of decidedly different character, the reproduction is said to be sexual; but between this fertilization and the coalescence of perfectly similar cells (conjugation), there is probably only a difference of differentiation—morphological rather than physiological. The ovum is not, as was long supposed, a miniature model of the adult organism, but is a simple and undifferentiated germ—a cell morphologically equivalent to any of the other cells of the mother organism. In many of the lower animals, it may arise with some degree of indifference from various parts and strata of the adult animal, and it is only with increasing specialization of the different parts of the organism, that its production and liberation become restricted to a definite area and organ—the ovary.

In its earliest stages the ovum is a naked nucleated mass of protoplasm, in some cases markedly amœboid, as in Hydra; usually, however, it resembles encysted amœboid, in which the protoplasm is more or less compactly inwrapped within a protective envelope. Three parts of this ovum are specially important—(1) the protoplasmic mass of the cell, (2) the nucleus of the cell or the *germinal vesicle*, including a nucleolus or *germinal spot*, and (3) the surrounding envelope, or the *zona pellucida*. The protoplasm of the egg-cell has its usual jelly-like character, and contains numerous granules, which increase as the cell grows. Eventually, the granules take definite form as fatty yolk spherules, often very abundant. Previous to fertilization (i.e., to the conjugation of egg-cell and sperm cell), intricate and curious changes occur within the egg; the nucleus of the ovum, the so-called germinal vesicle, is partially protruded from the surface, forming the so-called directive or polar bodies whose final fate is unknown. The remainder of the original germinal vesicle compacts itself into the nucleus of the *mature* ovum (forming what is called the female pronucleus), and those changes are associated with beautiful arrangements and rearrangements of granules both within and around the nucleus. The spermatozoon or male element is brought into close proximity to the ovum by sundry processes, a portion of the egg-membrane projects upward to meet it, it is received into the body of the cell, and after various changes, eventually fuses with the female pronucleus. Some stimulation is thus supplied, and the result

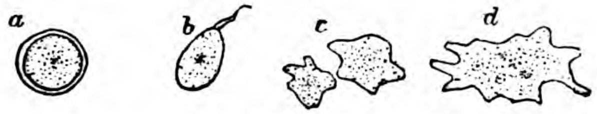


Fig. I.

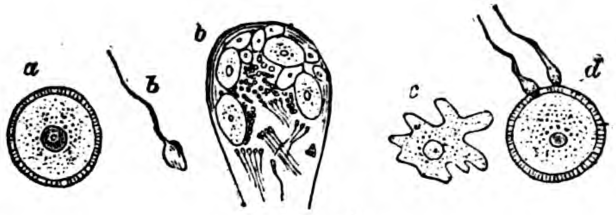


Fig. II.

Fig. I.—The cycle of Cell-Life exhibited by simplest organisms, and traceable in some of its phases in all:

(*a*) encysted (cf. ovum below); (*b*) ciliated (cf. spermatozoon); (*c*) amœboid (cf. both ovum and spermatozoon; (*d*) plasmodial or the flowing together of cells (cf. fertilization).

Fig. II.:

(*a*) Ovum showing egg membrane, granules, germinal vesicle, and germinal spot; (*b*) spermatozoon (*b*′) hermaphrodite gland of Helix; (*c*) amœboid ovum; (*d*) coalescence of sperm-cell and egg-cell.

is that repeated division of the egg-cell known as *segmentation.*

The Male Element, or Spermatozoon.—In the simplest organisms, the two coalescing elements are not distinguishable, either morphologically or physiologically, though occasionally one may be of smaller size. This coalescence of essentially similar elements is not dignified with the name of sexual reproduction, but is called conjugation. In the more highly aggregated and specialized animals, the sperms are produced by a definite organ—the testis; and while still the morphological equivalents of the ova, they usually exhibit with some constancy another phase of the cell-cycle—the ciliated. Like the ova, the sperms may, in some of the lower animals, arise with some indifference from various parts and layers of the parent organism, from cells which lie beside and thoroughly resemble those which become eggs; while even among such highly specialized forms as the Mollusca, there are hermaphrodite reproductive glands, where adjacent lining cells are seen developing on the one hand into ova, and on the other into ciliated sperms (Fig. II. *b*′). For our present purpose, it is sufficient to note that the spermatozoa are produced in great numbers within special mother cells; that they are themselves modified cells, most commonly in the ciliated phase, though occasionally amœboid; that the most typical forms exhibit two distinct parts, a head, the proper body of the cell, and a tail, the fine contractile thread-like lash used for locomotor purposes.

The spermatozoa are brought into contact with the ova in very varied ways, often with the aid of special appliances. The physiology of the coalescence is wrapped in obscurity, but it has been suggested that the transference of the waste products of the protoplasm of the sperm stimulates the protoplasm of the egg cell, and thus supplies the impulse lacking to make the inherited tendency to division an actuality.

Segmentation.—All ova of multicellular animals are fundamentally similar not only in structure, development, and fertilization, but also in the early phases of their development. Just as conjugation in the protozoa is followed by division of the united mass, so is it with the fertilized ovum which undergoes repeated division or *segmentation.* The only difference is, that while the new cells into which the former divides fall asunder, each to lead a separate existence, the segmentation-masses of the latter remain united and build up a single organism.

Before passing to the discussion of the formation of the embryo in some of the chief animal types, it may conduce to clearness to forestall the result by summarizing the leading stages exhibited in the development of the ovum. After the fusion of spermatozoon and ovum, or more strictly, of spermatozoon and female pronucleus, the egg is still of course a simple cell with a single nucleus. This state does not, however, last long. Intimate changes set in within and around the nucleus, resembling those seen in an ordinary dividing animal or vegetable cell. The protoplasm of the ovum moves in an amœboid fashion, and the final result is the division of the mass—the formation of two cells each with its nucleus. Repeated division follows, and thus we have successive stages with two, four, eight, sixteen, thirty-two, etc., cells (Fig. IV., line 2). The resulting ball of cells, normally of uniform size, may be hollow or solid, according as a space has or has not been between the *segmentation masses.* The hollow sphere is called a *blastosphere,* and the cavity the *segmentation cavity;* the solid ball has received the name of *morula* or mulberry mass of cells. These two results of segmentation differ but slightly, and are connected by intermediate stages; the solid morula eventually develops an internal cavity, and is then sometimes called a *blastula* (see third column of Fig. IV.). Some Protistan forms exhibit, during part of their life, stages which correspond very closely with the blastosphere stage in the development of the ovum. Such forms are *Volvox* and *Magosphæra* (Fig. IV., A. 3). It is claimed that thus is supplied a partial rationale of the process of segmentation when it is viewed as 'a survival transmitted from early ancestors.' This does not, however, shed any light on the immediate physical causes, nor on the mechanics of segmentation. In regard to these, we can as yet only say that molecular changes are induced by the entrance of the spermatozoon, perhaps as similar phenomena of aggregation, etc., are evoked in living protoplasm by suitable chemical reagents, that the nucleus exhibits those changes in the most marked degree, and seems in some way to take the initiative in division, and that changes of cohesion in the protoplasm find their expression in that division which has in phylogenetic history been found morphologically necessary and physiologically advantageous for the growth and formation of the embryo.

The sphere of more or less uniform cells, known as the morula or blastosphere, is followed by a stage in which distinct germ layers are differentiated. The nature of this fundamental process is, in many of its details, still undetermined; but in the majority of cases, the general features of the formation of at least two of the three layers are known with some clearness. From a single layer of cells surrounding a spherical central cavity, we pass to an oval flask-shaped two-layered form known as the *gastrula* (Fig. III.). The mode of formation is in most cases by the pushing in of one half of the ball of cells into the other—by invagination (Fig. IV., C. 4). This *gastrula* is usually by evolutionists regarded as the survival of the *Gastræa* or primitive ancestor of the multicellular animals, and the form still persists in some of the simplest of these (*Gastræadæ,* simplest sponges, etc.). The outer layer of cells forming the gastrula is called the Ectoderm, and discharges protective, sensory, and sometimes locomotor functions. In the latter case, the component cells are provided with cilia. The inner layer of cells lining the central cavity is called the Entoderm. It forms the wall of the primitive digestive cavity, and discharges nutritive functions. The primitive alimentary cavity formed, as above described, by the dimpling in of the blastosphere, communicate with the exterior by the mouth of the gastrula or *blastopore*. In the vertebrate animals, this gastrula stage is largely disguised, though very distinct in the lowest form, the Lancelet or Amphioxus (Fig. IV., J 4). The disappearance of the typical gastrula stage is, in part at least, conditioned by the fact that large quantities of nutritive material or yolk gather in those cells which would be normally invaginated, and make the usual invagination mechanically impossible.

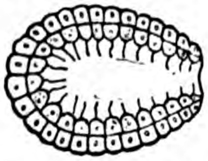


Fig. III—Gastrula: Showing ectoderm, ciliated entoderm, blastopore, and central cavity.

The *Gastræa theory*, as above suggested, sheds light on the formation of only two out of the three germinal layers. Between ectoderm and entoderm, there subsequently appears a third middle layer, the mesoderm, which seems to arise sometimes from the ectoderm, sometimes from the entoderm. A very general mode of occurrence is in the form of two pockets pushed outward from the entoderm which lines the primitive alimentary cavity of the embryo. The cavities of these two side pockets unite to form the future body cavity, and inclose the alimentary canal and other organs; the walls of the pockets form the mesoderm, the outer and inner sides having very different destinies. From the ectoderm or epiblast are formed the central nervous system and the epidermis. From the entoderm or hypoblast are derived the epithelial lining of the digestive canal, of the windpipe and bronchial tubes, of the ducts of the liver, pancreas, and other glands of the alimentary canal. The hypoblast also forms the notochord. All the remaining organs and structures are formed from mesoblast.

Development of the Embryo in the different Groups.—Here only a few types can be alluded to, and much is left to be inferred from Fig. IV. The simplest modes of reproduction are of course exhibited by the simplest animals—the *Protozoa*. Of the sexual process which characterizes all other animals (*Metazoa*), with the exception of the intermediate *Dicyema*, we have here only hints. The simplest and, on this theory, earliest mode of reproduction probably took the form of an almost mechanical separation of a portion of the primitive amœboid organism. This soon found more definite expression in the process known as *gemmation* or budding, where a portion of the protozoon is separated from the larger mass, and this differs only quantitatively from the much more frequent, and in fact general method of simple division or *fission*. From this latter mode, sometimes observed in multiple form, it is but a step to that third kind of asexual reproduction known as *spore-building*, where a number of young protozoa are formed from the protoplasm of the parent, usually under the shelter of a previously secreted protective cyst. All these processes, especially the last, may be preceded by that temporary or permanent union of two animals which is called conjugation, an auxiliary stimulating process, which is itself

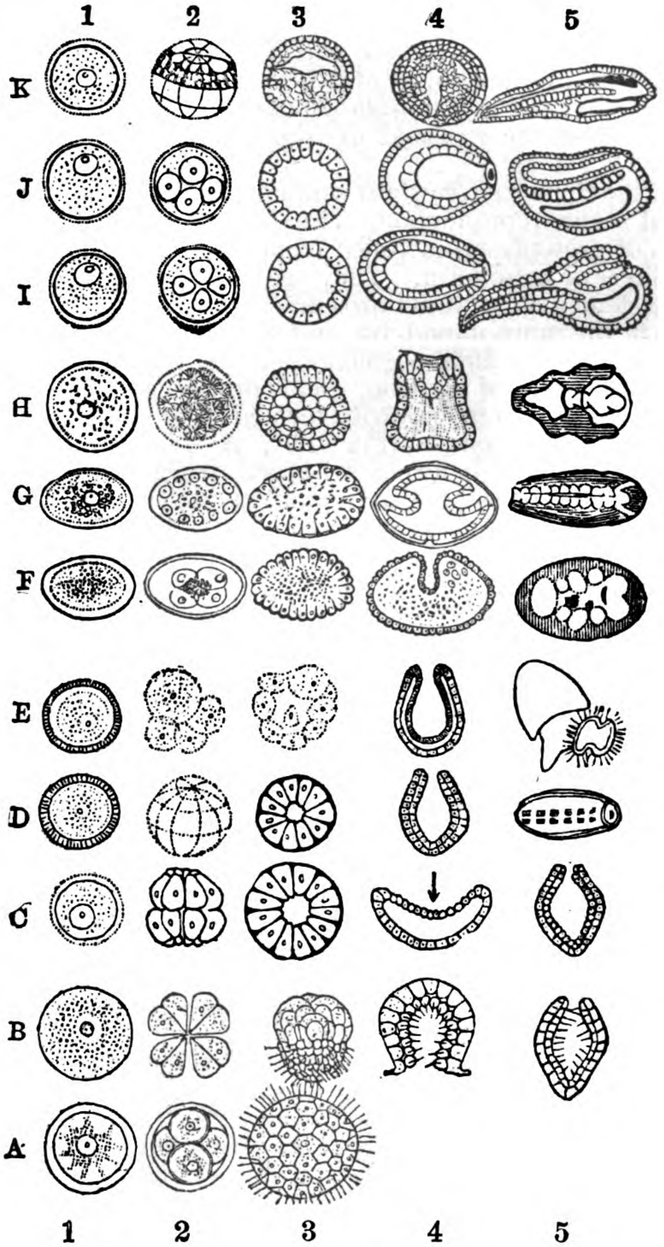


Fig. IV.

A, *Magosphœra (Katallacta)*; B. Sponge; C, Coral; D, Earth-worm; E, Mollusk; F, Crustacean; G, Insect; H, Star-fish; I, Ascidian; J, Amphioxus; K, Frog.
1, Ovum; 2, Segmenting Ovum; 3, Morula or Blastosphere; 4, Gastrula; 5, Further advanced embryo.

perhaps the definitized form of the mere mechanical flowing together of exhausted cells, and which may be regarded as the undifferentiated form of sexual reproduction. The young *Protozoa* asexually produced in any of those ways rarely differ from the adult, except in size or in the particular phase of cell life which they exhibit. In such cases, however, as the *Volvocineæ* and *Katallacta* we have at one period of the developmental history a cell-colony, which at once suggests that mulberry mass which we have seen to result from the repeated division of the metazoan ovum (Fig. IV., A 3).

In the Sponges (*Porifera*) we find the first definite example of sexual reproduction. The eggs are a naked amœboid mass of protoplasm, modified from cells of the middle tissue layer or mesoderm. They are fertilized by needle-like male elements or spermatozoa arising within special mother cells in the same mesoderm, and this impregnation is followed by a repeated segmentation of the egg-cell along different planes of division. This process results in a cell-colony such as is temporarily formed in the history of the protozoon Magosphæra (Fig. IV., A 3 and B 3). This sphere of cells with its central space (segmentation cavity) is called a blastosphere, and exhibits, especially after its liberation from the parent sponge, two kinds of cells. The smaller upper half is built up of large darkly granular cells of nutritive function, the larger half of clear cylindrical ciliated cells differentiated for the locomotor and respiratory functions of the free-swimming life. When the young sponge fixes itself, the granular cells predominate, grow over the now more idle ciliated cells, and cause that invagination of the latter which results in what is known as a *gastrula*, an embryo with two layers of cells inclosing a central space, and with an open mouth at one pole (Fig. IV., B 4). Between the outer granular cells (the entoderm or epiblast) and the internal ciliated layer (the ectoderm or hypoblast), a third set of cells appears, forming the mesoderm or mesoblast. After the formation of a mouth, and the appearance of spicules, the fixed gastrula does not differ essentially from the adult sponge, which when simple may, with some accuracy, be described as a permanent gastrula (cf. Figs. III. and IV., B 4). The above sketch does not hold good for *all* the sponges, but it may be taken as an example of a very simple metazoan development, from the basis of which the others may be summarily treated.

In the development of the *Cœlenterata* (C), the segmentation is complete, and results in the formation of a solid mulberry mass of cells (morula), or of a single-layered sphere of cells (blastosphere) inclosing a segmentation cavity. A two-layered embryo with a central cavity eventually results, passes through a period of free-swimming life, in which the cilia of the outer germinal layer serve for locomotion, settles down in the majority of cases, and by the formation of mouth and mesoderm, tentacles, skeleton, etc. passes into the adult state. As in the sponges, the two-layered embryo may result either by invagination or by delamination; and besides the gastrula, we have here, in very general occurrence, an oval, ciliated, closed, two-layered embryo—the *planula*.

Among the jointed worms, the segmentation of the ovum is, in the majority of cases, unequal (Fig. IV., D). This results (e.g. in the earthworm) in a blastosphere with two kinds of cells—epiblastic and hypoblastic; the latter are invaginated, a somewhat sperical gastrula is formed, and the blastopore or mouth of the gastrula becomes, on elongation of the embryo, the mouth of the adult. A third middle layer of cells appears in the form of two ventral mesoblastic bands, which afterward form and line the body cavity. A dorsal thickening of the upper layer cells or epiblast forms the head nerve ganglion, while two ventral thickenings of the same layer unitedly form the ventral chain of ganglia. The embryo of related marine worms is ciliated, and the development is often complicated by an alternation of generations.

The typical development among the *Mollusca* (Fig. IV., E) supplies a good illustration of unequal segmentation. The first four segments are equal, and exhibit a clear protoplasmic and a granular vitelline portion. In the division which follows, some cells--fewer and larger according to the quantity of food-yolk—are seen in contrast to the smaller and more numerous cells destined to form the epiblast, and are eventually completely inclosed by the latter in the formation of the gastrula. The mesoblast is formed from some cells originating at the mouth of the gastrula (blastopore), and spreading so as to form a complete third germinal layer between the epiblast and hypoblast. The typical mollusk embryo, excluding, however, the Cuttlefish tribe (Cephalopoda), is characterized by the possession of three noteworthy organs (Fig. IV., E 5): (1) the velum—a ring of cilia on a ridge of cells usually in front of the mouth; (2) the shell-gland—a thickening of the epiblast on the posterior and dorsal side, having some connection with the formation of the shell; (3) the foot—a projection of the epiblast on the ventral side between mouth and anus. See MOLLUSKS: METAMORPHOSIS: etc.

In the development of the *Insect* egg, we find a general occurrence of a kind of segmentation not very different from that characteristic of the other great group of jointed-limbed creatures—the *Crustacea* (F and G). In these eggs there is a central yolk mass surrounded by a layer of clear formative material. The preponderating mass of central yolk prevents the segmentation of the egg as a whole, and the result is a single peripheral layer of cells inclosing the yolk. In the insect this layer becomes thickened ventrally to form the 'ventral plate,' on which the embryo is mapped out. A median furrow on this ventral plate results in the formation of the middle layer or mesoblast. The hypoblast originates probably from a secondary segmentation of the yolk. Besides this peculiar segmentation, there is a characteristic occurrence of embryonic membranes which arch over the ventral plate and shield the embryo in a double fold (G 4). The two limbs of this fold, which so strikingly resembles that of the higher Vertebrata, have been called the amnion and serous membranes. For the various stages from egg to grub, and grub to chrysalis, see **INSECTS: METAMORPHOSIS**: etc.

As to the development of the star-fish or Echinoderm embryo, we must be content with referring to the stages as seen in the figure (H. 1–5), and with noting the fact that the history is greatly complicated by the occurrence of a curious and intricate larval metamorphosis.

Vertebrata.—In the very simplest vertebrates the successive stages of blastosphere and gastrula are seen well, and both the segmentation and the formation of the gastrula are essentially normal (cf. I and J). The development of the embryo in the different vertebrate groups is, however, so varied in detail that only a few general facts can here be noted. Two typical forms of ovum-segmentation may be noted: (1) total and unequal, and (2) partial. The former is exhibited by such widely separated types as the hagfish, the sturgeon, the frog, and the rabbit. This mode of division does not proceed equally (K 2), but with greater rapidity in the upper half of the egg where there are fewest yolk granules. The lower cells full of yolk are fewer and larger, and from the nature of the case, an invagination could not take place. A partial invagination does, however, take place to form part of the wall of the primitive alimentary cavity, and besides this, the upper (epiblast) cells grow almost completely round the lower (hypoblast) cells, leaving only a narrow opening corresponding to the *blastopore* or mouth of the gastrula. The other mode of segmentation is characteristic of birds and reptiles, and of the Cod and Shark group of fishes. In these cases, only a part of the ovum is segmented to form the embryo. This *partial* segmentation is not, however, separable by any sharp line from that exhibited by, e.g., the frog ovum, and is apparently determined by an immense increase in the quantity of yolk stored up at the lower pole of the egg. In an unfertilized hen's egg, as mall white disk consisting of formative protoplasm is seen lying on the mass of yolk. After fertilization and consequent segmentation, this disk appears as a lens-shaped mass of cells arranged in two layers and known as the *blastoderm.* It slowly spreads over the whole of the non-segmenting yolk, enveloping it in a sort of bag, but it is only the central portion of the original lens-shaped blastoderm which forms the seat of those processes by which the organism of the chick is built up. In the mammalia the segmentation is, like that of the frog, complete, and the epiblast cells form the gastrula stage by growing round the hypoblast as indicated in K 3, 4.

Starting now from the formation of what is called the blastoderm, and noting that it is only a portion of this that can be usually regarded as the proper embryonic area—let us briefly indicate some of the chief events in the development of the vertebrate embryo.

(1) Between the two fundamental germinal layers called epiblast and hypoblast, a third middle layer or mesoblast appears, and this in very varied ways.

(2) In all vertebrates a dorsal strip of epiblast becomes separated from the rest to form the central nervous system.

In the primitive and general mode of formation of what afterward becomes brain and spinal cord, a groove appears along this strip of epiblast or *medullary plate;* the sides of the groove then arch upward, and uniting overhead, eventually turn the groove into a neutral canal—of which the anterior portion is called the brain.

(3) The alimentary canal has three sections, each with a different history: (*a*) a main middle portion appearing at first as a tubular cavity completely surrounded by hypoblast or inner layer cells; (*b*) a mouth portion formed by a tucking in of epiblast or upper layer cells, the dimpling in or invagination extending till this new cavity joins with that main division just noted; (*c*) a hind or anal portion caused by a similar invagination of epiblast at the other end.

(4) The body cavity in the most primitive vertebrates originates in the form of a pair of pocket-like outgrowths from the primitive alimentary cavity. The upper part of each of these side pouches becomes separated from the lower, and is divided transversely. The resulting segments lose their cavities, and form what are called mesoblastic blocks, which become masses of muscle and other tissue round about the rudimentary backbone or notochord. The lower parts of the pouches remain hollow, and together form the body-cavity.

(5) On the dorsal wall of the primitive alimentary cavity or *archenteron,* to which we have already alluded, there is formed a solid cord of hypoblast or lower layer cells, and this, stretching from brain to tail below the nerve cord or spinal cord described above, forms the most characteristic organ in the vertebrata—the notochord. The simplest vertebrates have no other skeleton but this notochord or rudimentary backbone (I and J 5). Round it, after ensheathing, segmenting, and many other changes, the backbone itself is formed.

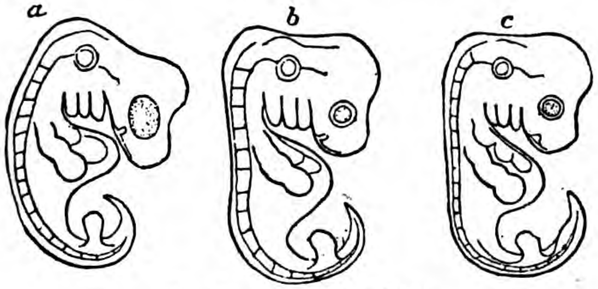


Fig. V. (after Haeckel).

(6) From the throat, pouches appear which open outward, and these gill clefts or visceral clefts are found in all vertebrates at some stages, and hints of them are already seen among much lower animals.

Not entering into further detail, we may note that in reptiles, birds, and mammals, the embryo is provided with two associated fetal structures called amnion and allantois.

The amnion is a protective fold which becomes a sack enveloping the embryo. The allantois is a pouch pushed out from the hind end of the alimentary tract. It spreads out beneath the amnion. It is really a urinary bladder 'precociously developed,' and exhibiting 'change of function,' inasmuch as it discharges respiratory functions in the embryos of birds and reptiles, and nutritive in mammals—where it forms part of the placenta.

Generalizations.—From the general tenor of the above sketch, some of the main biological generalizations have been drawn. We have already referred to the importance of the simple fact of the origin of the organism from a simple cell or ovum—stimulated into activity by a male element. The ovum is morphologically equivalent to any cell of the mother, and from it are descended all the cells of the daughter organism. The sperms are also to be considered as cells, and the coalescence of the two elements seems to be the differentiated form of conjugation—that simple kind of fertilization found among the simplest plants and animals. In the spermatozoon we saw the ciliated phase of the cycle of cell-life predominant; in the ovum, the amœboid and the encysted. From the diagram IV. may be seen the essential unity in the history of the embryos of the great animal groups, not only in their general features, but even in some cases most strikingly in their later stages, as seen in Fig. V., where advanced embryos of (*a*) fowl, (*b*) dog, and (*c*) man are placed, side by side.

In the theory of evolution much importance is attached to the third great stage, the gastrula, distinctly seen in so many groups (Fig. IV., line 4), Haeckel's gastræa theory, explains it by seeing in the gastrula the survival of the primitive Gastræa, the hypothetical ancestor of all the metazoa or multicellular animals (Fig. IV., line 4). The most important morphological generalization to be deduced from a study of the development of the embryo is also the most familiar. It is that which is expressed in Von Baer's famous law of differentiation from a general to a special type. 'In its earliest stage,' he said, 'every organism has the greatest number of characters in common with all other organisms in their earliest stages; at each successive stage the class of embryos which it resembles is narrowed.' At first the human embryo, e.g., resembles any other germ, rapidly it comes to resemble only every animal ovum; again a stage, and it agrees only with vertebrate embryos; then again, and the circle of its similarity is narrowed to that of mammals; lastly, it can be compared only with the fetus of the higher monkeys, and the final stage is reached, when it resembles only other human infants. This law expresses what, in somewhat loose and popular language, is often called the individual embryo's recapitulation of the history of the race. This recapitulation is, however, only true of the general features, and it must be noted that it is not true that human embryo is in turn like a fish, a frog, a bird, etc., but merely that the human embryo is seen to travel along the same morphological route as the embryos of these other animals, and that for a limited distance, till the respective paths diverge.

Of this celebrated generalization, and of the apparent divergences from it, an explanation not only ingenious, but with remarkable fitness at many points, is afforded by the evolution theory, according to which the changes of the embryo are the retrospect and recapitulation of the changes which the species has passed through in its historical evolution. The general route pursued by the embryo in its individual development from the simple germ to the adult organism, the circuitous and irregular paths followed by many, the history of those embryonic organs which appear for a little but are soon replaced by others more effective, and of those which only appear and then are speedily suppressed or aborted, and many other features of development, are even held to find their rational and true import only when seen in connection with the long past historical evolution of the species. In other words, the individual evolution or ontogeny, as it is called, finds its complement and explanation in the historical evolution or phylogeny.

This elevates the evolution hypothesis into an established principle of science. The more cautious thinkers, while accepting all the scientific facts involved, dissent from this generalization as too broad for the present stage of the investigation, except as it may seem for a hypothesis, for which service its scientific propriety, interest, and value are cheerfully conceded. But they deny that a historical evolution gives the only *rationale* of the individual development. The fact that coins the most artistic and of the highest value pass through many earlier stages of manufacture in which they show striking similarity to coins of far less value and of ruder workmanship, does not, they say, compel the generalization that all higher coins were developed from some original form now recognized as the lowest on the scale. In other words, while evolution may yet be proved true, it is not now the only scientific theory possible regarding the development of living forms; equally tenable is the theory of their development on individual lines, each to its special range or limit; and all in unity of design, because all after the pattern of one primeval and typical form which may have been the lowest, or may have been the highest, on the universal scale.

For other generalizations as to heredity, teratology, etc., see DARWINIAN THEORY: DESCENT OF MAN: SPECIES: and cognate titles.

DEVELOPMENT OF DOCTRINE: the modifying process through which Christian or philosophical opinion passes in its transmission from age to age. At first comparatively simple in its expression, doctrine has a tendency to become more complicated and technical in structure as argument is exercised upon it, and the spirit of controversy excited. The difference between the doctrinal statements in the Pauline epistles and some of the earlier creeds, such as that known as the Apostles' Creed on one hand, and on the other hand the elaborate expositions of the mediæval theologians, and again of the Protestant theologians of the 16th and 17th c., is a difference at once appreciable by the theologian, as it is full of interest to him. There is, beyond doubt, at these several points in the history of the church, a certain growth or extension of Christian opinion called forth by, and corresponding to, the exigencies of the times. This is what is meant by the development of Christian doctrine, and the name denotes with sufficient propriety an unquestioned series of phenomena.

It is true that the idea of development in doctrine is one of modern origin, unknown to the earlier dogmatic ages of the church. But this merely proves that it is only in recent times that the history of the church has been reviewed in a critical and philosophical spirit. The idea of development is modern in its application to science altogether, and especially to the science of history. The ground on which it is vindicated in its application to Christian doctrine, is, that this doctrine is not a mere repetition of Christian truth in the language of inspiration, but really the rational or argumentative exposition of this truth. It represents this truth as it appears to the Christian reason in different ages. It is the expression of what has been vaguely called the *Christian consciousness* working in contact with the text of Scripture. The Nicene doctrine of the Trinity, for example, is the definite explanation which the Christian reason in the keen conflict of the 4th c. gave to the large, undefined, and general expression of the gospels and epistles as to the relation of the Father and the Son. The doctrine of the atonement, as a *satisfaction* to God for the sins of the world, is first clearly and explicitly unfolded by St Anselm in the 11th c. It is not meant that the elements of either of these doctrines are not to be found in Scripture, or that they are the product of human ingenuity; it is only affirmed that the scriptural elements in the one case and the other, were first clearly and argumentatively unfolded by the ingenuity of the Christian reason at these different times. The very idea of *doctrine* implies the employment of reason, and the exercise of inquiry and argument upon the divine truth of Scripture. It is this truth analyzed and reflectively given forth—not the mere equivalent of Scripture, but something derived from it by Christian investigation and culture. Such a process of investigation and culture is necessarily variable and progressive. The divine fact remaining the same, the human explanation or doctrine of it may and does greatly vary. The course of this variation—the rising and falling of the human apprehension of the meaning of Scripture—is the development of doctrine.

This view is to be distinguished from that which characterizes the extreme subjective school of German theology. According to this school, Christian doctrine is nothing else than the expression of the Christian consciousness at any time. Scripture maintains no permanent or authoritative relation to it. It is all progress—a continued flux, without any normal standard or expression. Scripture may be its primary expression, but it may leave its fountain-head, and in the course of time issue in developments not necessarily bound to Scripture. But according to the view above set forth, Scripture remains the absolute and complete revelation of Christian doctrine, which is continually unfolded, but never exhausted by inquiry—beyond which right reason and truth never travel. The Christian revelation not only admits of, but demands constant criticism, as the means of unfolding more comprehensively and perfectly its contents, but it remains in itself the consummate expression of all spiritual truth; and it is this very peculiarity of the Christian revelation that makes its contents capable of continual and ever fresh development. It is because its substance is divine, that its doctrinal expressions never cease to interest and to answer to the necessities of successive times. Other religions, while capable of development, reach a point where they cease to have any further living meaning, and pass on the one hand into mere popular mythology, or into an esoteric priestly tradition. They become transmuted into poetry or some ordinary product of philosophical speculation. Civilization overtakes and supplants them. But it is of the distinguishing divine character of Christianity that, always centering in the personal Son of God, its doctrines possess a vital ever-renewing power, capable of adaptation to the highest forms of human civilization, and full of enlightenment and guidance to the most advanced intelligence. The development of Christian doctrine, therefore, is not merely a subject of curious and important historical study, but of great and significant influence for the present and the future.

DEVENTER, *děv'ěn-tėr* or *dā'věn-tėr* (often called Demter): fortified town of Holland, province of Overyssel; on the Yssel, abt. 55 m. e.s.e. of Amsterdam. The principal buildings, beside the cathedral, in the early Gothic, are the town-house, the court-house, and prison. Tower-flanked walls surround the town; also a broad deep ditch. The industry of D. consists in iron-founding, the manufacture of carpets, stockings, cotton, glue, etc. Its gingerbread (called *Deventer Koek*) gives employment to several factories. There is also trade in grain, cattle, linen, ham, and butter. Pop. (1880) 19,162.

DE VERE, *dė vēr'*, Maximilian Schele, LL.D.: b. near Wexio, Sweden, 1820, Nov. 1: author. He received a thorough education, served some time in the Prussian army, and then in the diplomatic corps, and, removing to the United States, was appointed prof. of modern languages in the Univ. of Va., 1844. He has contributed largely to current periodicals; published *Outlines of Comparative Philology* (1853), *Stray Leaves from the Book of Nature* (1856) *Studies of our English*, *First French Reader*, *Grammar of the French Language* (1867), *Wonders of the Deep* (1869), *Grammar of the Spanish Language*, *Americanisms* (1871), *Modern Magic* (1872), *The English of the New World* (1873), and *The Great Empress*, a novel; and translated into English the *Problematic Characters* of Spielhagen (1869), *Through Night to Light* (1869), and *The Hohensteins* (1870).

DEVEREUX: see ESSEX, EARL OF.

DEVEST, v. *dĕ-vĕst′* [see DIVEST]: in *OE.*, to strip or take off clothes; to divest; to annul. **DEVES′TING**, imp. **DEVESTED**, pp. *dĕ-vĕs′tĕd.*

DEVEX, or **DEVEXE**, a. *dĕ-vĕks′* [L. *devexus*, pp. of *deveho*, I carry down—from *de*, down; and *veho*, I carry]: bending or bent downward: N. a curve; devexity. **DEVEXITY**, n. *dĕ-vĕks′ĭ-tĭ*, a curving or incurvation downward; a declivity.

DEVIATE, v. *dē′vĭ-āt* [mid. L. *devĭātus*, gone aside—from *de*, *viă*, a way or path: It. *deviare:* F. *dévier*]: to turn aside from the common way or method; to wander from the right path or course; to err; to go astray. **DE′VIATING**, imp. **DE′VIATED**, pp. **DE′VIA′TION**, n. *-shŭn* [F.—L.]: a turning aside; variation from an established rule; a departure, as from a right course, way, or line; a wandering, as from the path of duty; sin; error. *Deviation of the plumb-line*, irregularity observed near massive cliffs, supposed to be due to their attraction; observed also on plains, and attributed to subterranean hollows, or to denser masses of earth. **DEVIOUS**, a. *dē′vĭ-ŭs* [L. *devĭŭs*, that lies out of the highway]: out of the common track; wandering; roving; going astray; circuitous. **DE′VIOUSLY**, ad. *-lĭ*. **DE′VIOUSNESS**, n. state of being astray.—SYN. of 'deviate': to wander; swerve; stray; depart; digress; deflect;—of 'devious': rambling; vagrant; excursive; winding; erring.

DEVICE, n. *dĕ-vīs′* [OF. *devise*, a device, an emblem—from mid. L. *divīsă*, a division of goods, a device (see DEVISE)]: a contrivance; anything formed by design; a scheme or stratagem; a project; an emblematical representation. **DEVICE′FUL**, a. *-fûl*, in *OE.*, full of devices.—SYN. of 'device': emblem; design; scheme; shift; stratagem; invention.

DEVICE′ [from middle-age Lat. *divisa*, a drawing or design]: a motto expressed by a pictorial emblem. The motto proper originated in the emblem, a written inscription coming to be added to the pictorial design, to render the meaning more explicit. As early as the times of Æschylus, 'the seven heroes before Thebes' appear with devices on their shields. In the middle ages, devices on coat armor came into regular and formal use. They were used both as charges on the shield and as crests. The device differs from other heraldic emblems in that it has always some specific reference to the history, or circumstances, or position of the bearer. Devices, moreover, were generally borne only by the individual who assumed them, and not by the other members of his family or his descendants, like the crest or cognizance. They were often contrived to typify a special enterprise, the general character of the wearer, or even to designate his name. On all festal occasions, they figured on triumphal arches, on banners and hangings. At a later period, it became customary to work devices into buildings. See BADGE: CREST: MOTTO: HERALDRY.

DEVIL, n. *dĕv'l* [AS. *deóful;* F. *diable,* devil—from L. *diabŏlus;* Gr. *diabŏlos,* the devil: comp. Gael. *diabuail,* the god who strikes]: the Evil Spirit; Satan. **DEV'ILISH**, a. of or like the devil; wicked. **DEV'ILISHLY**, ad. *-lĭ.* **DEV'ILISHNESS**, n. the quality of a devil. **DEV'ILISM**, n. *-ĭzm,* state of the devil. **DEV'ILMENT**, n. wicked mischief. **DEV'ILRY**, n. *-rĭ,* mischief and tricks as might be expected from the devil; extreme wickedness. **DEV'IL**, v. to grill with Cayenne pepper, as kidneys. **DEV'ILING**, imp. **DEVILED**, pp. *dĕv'ld.* **GOING OR GONE TO THE DEVIL**, irretrievable ruin. **TO PLAY THE DEVIL WITH**, to produce irretrievable ruin. **PRINTER'S DEVIL**, an errand boy or junior apprentice in a printing-office.—SYN. of 'devilish': Satanic; diabolic or diabolical; hellish; infernal; detestable; destructive; malicious.

DEV'IL, or **SA'TAN** [Gr. *diabolos,* false accuser: Heb. *satan,* adversary]: in the Old and New Testament a mighty spirit of evil who has, during unknown ages, ruled over a kingdom of evil spirits, and is in restlessly active opposition to God. This belief, however, was very gradually developed in the Jewish mind; and it is beyond all question, that it acquired clearness and prominence through extra-national influence. In England, the 'doctrine of Satan' has received scarcely any critical treatment at the hands of scholars; but in Germany, the subject has been most learnedly investigated. The conclusions at which some of the most learned biblical scholars of the continent have arrived, and even the principles on which they proceed, may be questioned or even rejected; but a brief account of their method of historical analysis may be instructive. The older Hebrews, it is said, who lived before the period of the Babylonian captivity—judging from the silence of Scripture—knew nothing, and certainly taught nothing, of evil spirits in the later sense; i.e., of beings separated from God, who were evil in the essence of their nature, and worked evil only (though against this statement will be adduced the record in the early chapters of Genesis, of the 'Serpent' who slandered God to Eve, and of the 'Satan' who appears as the slanderer of Job to God). *Moral* evil was rather looked upon as properly the act of man; *physical* evil, or adversity, on the other hand, as punishment merited through sin, and inflicted by a just and holy God, who was thus necessarily conceived as the true source of all calamity. The angels who foretold God's purposes, and executed his will, however great might be the physical evil that they occasioned, are never accused of *moral* evil. Even in the Mosaic account of the seduction of Eve, it is said that we need not believe that the author regarded the serpent other than as 'the most subtle of all the beasts of the field,' or that he meant to conceal under so plain a statement an allusion to Satan. It is probable, however, that at some early period in their history, the popular faith of the Jews, partly divorcing itself from its grand religious conceptions of the 'one living and true God,' and lapsing —as has everywhere been the case with the popular faith—into petty superstitions, had become familiar with the idea of certain fearful unearthly beings haunting wildernesses, similar to the fauns and satyrs of Greece, who might form the connecting-link in the later development of an actual demonism. Traces of this are clearly visible in the Pentateuch. The Hebrew word *seirim*, Leviticus xvii. 7, which our translators have rendered 'devils,' means only 'hairy ones.' Now, the Egyptians worshipped the *he-goat*, and the Hebrews partook, as we know, of their idolatry. Therefore Moses in this verse, forbidding them to commit this sin in future, says: 'They shall *no more* offer their sacrifices to *seirim;*' i e , to the Egpytian he-goats. The development of demonism was materially furthered during and after the Babylonian captivity by Medo-Persian influences. In those canonical books of the Old Testament which belong, in their present form, to the post-exilian period—i.e., the period subsequent to the exile—the Jewish conceptions of angels become more definite. They possess different ranks, names, and specific offices. They are the tutelary guardians and helpers of particular lands and peoples, but are everywhere in absolute dependence on God. And now we meet also, for the first time, with an angel called *Satan*, who, however, still figures as a minister of God, and with the others appears before Jehovah, but with the function assigned to him of accuser and seducer. It is he who—1 Chron. xxi. 1 (*Chronicles*, it should be mentioned, is considered by many critics, both evangelical and rationalist, to be the composition of Ezra, and therefore *post-exilian*)—stirs up David to number the people; while in the older Hebrew version (2 Sam. xxiv. 1) the same act is attributed to the indignation of God, the conception of Satan not *then* having clearly, if at all, presented itself to the Hebrew mind. It is Satan also who throws suspicion on the piety of Job, and with the permission of Jehovah, causes a series of misfortunes to befall him; and in Zachariah iii. 1, Satan is represented as 'resisting' the angel of God, and as a false accuser of the high-priest Joshua. As yet, however, an evil nature is not *expressly* ascribed to him, but, what is much the same, it is assumed that he takes a pleasure in active evil. It is alleged to be a purely arbitrary and untextual interpretation of Isaiah xiv. 12 ('How art thou fallen from heaven, O Lucifer, son of the morning!') that would force these words to refer to the fall of the D., or determine from them his name. In the Apocrypha, of which only a small part is Palestinian, the rest being either *Chaldaico-Persian* (e.g. *Tobias* and *Baruch*) or *Ægypto-Alexandrian* (e g. *Wisdom*) in its origin, the older Hebrew doctrine of misfortune coming from the angel of Jehovah is, so to speak, dismembered, and demons or evil spirits (but improperly translated 'devils'), in the New-Testament sense of the term (*pneumata ponèra*), are for the first time mentioned (and in *Tobias* and *Baruch* frequently) as the authors of calamities. According to the representations of these writings, the evil spirits dwell, like the older Hebrew hobgoblins, in waste places, but associate themselves for the injury or destruction of men, enter into them as tormentors, and can be expelled only by magical or mysterious means. To this class of beings the heathen deities were reckoned to belong. But even here there is no mention of an *organization* or kingdom or prince of demons. The first trace of a *Diabolos* or D. proper (and one in all probability springing from a foreign source) shows itself in the Book of *Wisdom* (ii. 24), in relation to the seduction of Eve, where it is said that through the D. the necessity of death has come into the world.

In the period elapsing between the close of the Apocrypha and the appearance of Jesus Christ, the Jewish ideas of angels, as well as of demons and the D., received an extensive development. This angelology and demonology, wholly foreign to the older Hebrew religion, is deemed to have been derived in all its essential characteristics from the system of Zoroaster, with which the Jews had become familiar by their long and close intercourse with the Persian empire during the exile, and subsequently. It was, however, impossible to transfer the *dualism* of Zoroaster into a creed so purely *Monotheistic* as that of the Jews; this would have destroyed the foundation on which their entire history rested. Two beings, equally eternal, equally powerful, was an idea which no Hebrew—mindful of the glorious deliverance of his forefathers out of the land of Egypt, of the law given amid the thunders of Sinai, of the manna in the wilderness, of the triumphs in Canaan, and the golden psalms of David—could for one moment entertain.

But on the other hand, now that as a nation the Jews were become weak and of little account, hemmed in, and crushed by mighty and advancing empires, no conception could seem more true or prove more consolatory, than that which permitted them to attribute their misfortunes to the agency of a demoniacal race, headed by a potentate inferior only to Jehovah himself. They could now believe that God had not forsaken his 'chosen people.' Thus, it is claimed, the dualism of Zoroaster suggested the kingdom and royalty of Satan, but the doctrine shaped itself in harmony with the national monotheism. The D. and his demons were represented as originally *angels*, who had fallen from their 'high estate,' been punished by God, and had therefore assumed a position of hostility, without, however, being able to materially frustrate the divine purposes. These opinions found almost universal reception among the people, as well as among those Jewish theologians who, with the Mosaic Law, held oral tradition also an authentic source of religious doctrine. Indeed the only Jewish sect which rejected them, was that of the Sadducees, who considered them, as also the doctrines of the Resurrection from the Dead, of the Messiah, of the Messianic kingdom, of the Last Judgment, of rewards and punishments, and of angels and demons, to be new, outlandish anti-Mosaic myths and theories. This conflict of opinion among the Jews prevented their ideas of the D. and demons from obtaining, in spite of their broad diffusion, a dogmatic and systematic stability. The populace and the Pharisees believed fervidly in the existence of such evil spirits; but their conceptions had not only all the heat, but all the confusedness of superstition.

In this condition were the Jews when the New Testament lifts up the veil of oblivion that had partially dropped on the face of the nation more than two centuries before, and the light of history again falls brightly on its features. We now find a swarm of demons in Palestine. These unclean spirits, however, can be exorcised. When expelled from the soul of the demoniac, their proper home is 'the abyss' (*Eis ten abusson*, Luke viii. 31). According to the popular conceptions, therefore, we must suppose their dwelling to be a dark subterranean region, although, like the demons of the Old Testament, they inhabit also the earth and the air. These demons (not properly 'devils') formed a society governed by a chief, called Satan, Devil, Beelzebub, Belial, etc. He is now firmly seated in the popular imagination as a fallen angel; but as yet there is no hint of his having seduced his followers from their allegiance to Jehovah, or of their having fallen at the same time. This idea first appears in the book of Revelation, chap. xii. (but it certainly is plainly stated in Paul's epistles that he works to seduce and deceive *men*) where mention is made of a great war in heaven between Michael and his angels on the one hand, and the D. and his angels on the other; 'And the great dragon was cast down, the old serpent, he that is called the Devil, and Satan, the deceiver of the whole world: he was cast down to the earth, and his angels were cast down with him.' Whether or not these popular conceptions of the D. and his influence were materially or spiritually interpreted by Christ himself, these scholars declare it impossible to say. He may either have accommodated his language to suit the popular mode of realizing the power of evil (a supposition which to their view involves nothing unworthy of his sinless character), *or* (for this is the only other hypothesis compatible with a belief in his divinity) he may have intended to recognize the essential truth of that doctrine of an evil personality which the Jews developed under the influence of Zoroastrian ideas.

But whether Christ meant to accommodate his language to the popular conceptions or not, the primitive church assumed the personality of the D. as an unquestionable fact. TheNew Testament ideas on this point were not only greatly enlarged, but in many respects entirely changed, partly through the introduction of a considerable number of heathen notions, and partly through the dogmatic tendencies of the time, in consequence of which the various statements in the Bible regarding Satan and evil were *uncritically* and *unhistorically* heaped together, and a doctrine of Satanic agency elaborated *logically* but not *theologically*. Holding firmly to the belief of a Satanic kingdom of darkness opposed to Christ's kingdom of light, the majority of the early Christians ascribed all evil, physical as well as moral, to the D. and his demons; failures of the crop, sterility, pestilence, murrain among cattle, mental maladies, persecutions of the Christians, individual vices, heresies, astrology, philosophy, and especially the whole body of heathenism, with its mythology and religious worship. The heathen gods were believed to be conquered by the work of Christ, but not to be wholly powerless; they sank down into demons, and so a part of their mythology passed into the doctrine of the Devil. It was they who, as demons, meaning to deceive, uttered oracles, were present at sacrifices, and inhaled the sacrificial incense, whereby the notion gained ground that the demon-nature was ever growing more and more sensual and materialized—a notion that reacted again on the conception of hell, which soon began to be painted in coarse earthly colors, blazing with eternal fire, through which blackened devils and scorched souls flitted in endless torment. From the gross materialism that now vitiated all conceptions of the D. and of demons, sprang the loathsome belief, common enough in the early church fathers, but during the middle ages exhibiting itself only in the superstitions of the vulgar—viz., of the carnal intercourse of devils with women: see WITCHCRAFT.

Concerning the fall of the 'devil and his angels,' opinions were long diverse. Some supposed that it occurred through envy; others, through pride; others, again, through concupiscence and excess; some placed it before, and others after the seduction of Eve by the serpent. Several of the Fathers (for example, Augustine) believed that man was created to fill up the gap which had been caused in the kingdom of Christ through the apostasy of Satan and those whom he had led astray. Meanwhile, the idea of the importance of the death of Jesus had been dogmatically elaborated. At first, Christians saw in that death a sacrifice, and in his blood a propitiatory power; but soon their thoughts reverted to the other scriptural representation of an actual victory over the D., a restoration of the Divine image in man, and the source and condition of holiness; whence was developed a wonderful dogma concerning the devil. God having declared that whoever should transgress his law, should incur death and damnation; and man having done so, God's justice and veracity compelled him to keep his word. But inasmuch as Eve was beguiled into transgression, and fell as it were unwittingly, it did not seem for the honor of the Deity that rational beings, partakers also of his own spirit, should be lost through a trick of the Fiend; wherefore Jesus offered himself to the D. as a ransom for the souls of men. The D., thinking 'the *man* Christ Jesus' of more value than all the rest of the race put together, closed the bargain immediately. But deceived in his turn by the 'appearance of flesh,' he did not recognize the Deity concealed beneath it; and not being able to retain the truly Divine Christ—indeed, shrinking from him in horror and dismay—he lost *both*—Christ and man. The D. was, however, *actually* deprived only of Christians; in all other men he dwelt and ruled through the force of original sin. In consequence of this, he was formally and with ecclesiastical ceremonies 'banished' (until the 3d c.), not only from 'demoniacs,' but also from all converts to Christianity from Judaism and heathenism; and when the practice of baptism had shaped itself into the dogma, that it was 'a necessary preliminary to holiness,' exorcism, or 'driving out the devil,' became a priestly 'art,' exercised on all new-born children. Those who died unbaptized, were (by that ruthless logic that frequently marks a barbarous theology) sent to hell; for though *potentially* Christ's, the church had not yet rescued them from their satanic master, by the appointed rite, and so the conditions being unfulfilled, the D. carried off his prey. Yet the heart of humanity, stronger in its simple instincts than the most iron creed ever hammered out of the human brain, showed its holy presence even in so fearful a dogma; and though it could not deliver the lost infants from the region of eternal fire, it assigned them less painful pangs, and a less dreadful dwelling-place. Also, baptism as the saving rite, was allowed to be performed in case of expected death by laymen and even by women. But while the power of the D. over all not guarded by Christian faith and rites, was supreme; over those who were so guarded, it was utterly weak. No Christian, not even the weakest, could be *forced* by him to do evil. Thus far had the 'doctrine of the devil' been developed at the 8th c., and at this point it has essentially remained in the Eastern or Greek Church; but in the Western, it took yet another development. This was mainly occasioned by the writings of Pope Gregory the Great, who partly took up the popular notions himself, infused into them other than prevalent theological opinions, and elevated the result of the incongruous mixture to the dignity of church doctrine. He calls the D. 'a stupid beast,' because he hopes for heaven, without being able to reach it, and entangles himself in his own net; but on the other hand, he admits him to have a *potentia sublimitatis*, and utters the profound idea that he cannot comprehend our thoughts. In these three notions lie the essential germs of the Germanic Faust-devil. The old German and Norse mythologies poured a flood of heathen fancies into the 'doctrine of the Devil.' Even Ulfilas, at a much earlier period, had translated the New Testament word *daimon* or *daimonion*, by *unhulthô*, i.e., she-devil, or sorceress, because the old Germans believed in *female* demons, while the Christian *usus loquendi* contains no trace of such. The peculiarly German conception of a now malignant, now gentle *female* devil, lives to this day in the German phrase, 'The devil is beating his mother' (when rain and sunshine quickly alternate). In England and Scotland, too, the phrase is, or recently was current, 'The devil and his dam.' The Germans have also the proverb, 'Where the devil cannot come, there he sends his grandmother.' Soon, however, the word *diabolus*, in violation of the New Testament distinction between it and *daimon*, came to signify devils of every or any sort. The Gothic form of the word was *diabulus*, *diabaúlus;* old Saxon, *diubhul*, *diubhal*, *diobol;* old High German, *diufal*, *tieval*, *tiubil*, etc. The dwelling of the D. was, of course, hell, which, however, according to old Germanic and Scandinavian notions, was placed in the dreary regions of the north. Although his mischievous powers are to be mostly controlled till the coming of Antichrist, when he expects to hold carnival, yet, like the ancient gods and demons, he occasionally appears on the earth. He then assumes at times a purely human form, but, like Vulcan, who was thrown down from heaven like himself, and the smith Wieland, of German mythology, he is somewhat lame. He is covered with a gray, green, or red cloak, like the Kobolds (q.v.) and Dwarfs (q.v.), (the earth and house spirits of the suppressed heathenism): sometimes, also, he appears black and sooty, as befits his dwelling-place, and his opposition to a pure God. But as the old deities, both classical and German, possessed the power of transformation to a most remarkable degree, the D., through his relationship with these, inherited this power when they vanished from the scene. The form he most frequently assume was that of an animal, approximating, in this respect, to the German forest-spirits and the Greek satyrs and fauns. At one time, he shows the foot of a horse or goat, with horns and tail; at another, he appears as a black horse, a he-goat, a hog, a wolf, a hell-hound, a raven, a serpent, a worm, a dragon, or a fly. The conception of the power of the D. was vastly enlarged by the influx of these new fancies. In fact, it rose almost to a new dualism; but, on the other hand, also, many mild and friendly *traits* of the heathen gods passed over into the popular conception of the D., and gave to his nature a quite new, humorous, and even merry side. As, after the introduction of Christianity, offerings were still occasionally made to the old gods, the D. shared in these honors. A horse, a he-goat, or a hound were at times sacrificed to him; and to the present day the expression has survived, 'To kindle a fire for the devil'—obviously an allusion to altar-flames. Various features of the old Norse gods, especially of Loki and Donar (Thor), the gods of fire and thunder, also were transferred to him. Hence the still current phrases in Germany, when thunder is heard: 'The devil must be striking,' and 'The runaway goose has gone to the devil.' (*Donner*, 'thunder,' is the word used for the devil in this case.) Every power, too, which, according to the older heathen belief, was lodged in the lesser demons, giants, etc., had now its proper centre in the great Fiend himself, who could perform all the pranks attributed to the more grotesque creations of the Norse mythology, and work all the evil of the more malignant spirits; but, in general, these beings were rather pressed into his service than absorbed by him, or incarnated in his person.

So did this great, originally Persico-Judaic belief spread itself through all Christian lands, incorporating with itself, first, the kindred conceptions of the ancient classical world, and, ultimately, the rich and varied superstitions of Teutonic and Scandinavian lands. Thus decked out in the costume of many different climes and ages, the Image of Evil passed into the light of the modern world. Every step forward that it now took robbed it of some potent spell that used to chill the blood and strike the heart with awful horror. Men first lost faith in the D.'s occasional incarnation; then medical science undertook, though it did not complete the work, to destroy his claims to the origination of mental phenomena; natural science deprived him of his control over the elements; historical criticism plucked from him his borrowed feathers; while metaphysics and a deeper religious exegesis have combined, not, indeed, to annihilate his personality or deny his influence, but certainly to realize the former under a more spiritual form, and to limit the latter by a reverential belief in the wisdom and goodness of God. See Mayer's *Historia Diaboli* (1780), Horst's *Dæmonomagie* (1817), and *Zauberbibliothek* (1826), and Grimm's *Deutsche Mythologie* (2d. edit. 1844); also Moncure Conway's *Demonology and Devil Lore* (1878).

At the outset of this article, it was stated that the 'doctrine of the devil' had received little critical treatment from English scholars. The following appears the prevalent mode of regarding the subject in Britain and America, among those who give attention to religious doctrine. The doctrine of the existence of a personal D., the chief of evil spirits, and directly or indirectly, through permission of free agency and for wise ends, the author of at least all *moral* evil, is maintained by reference to the Bible, regarded as containing one revelation of truth harmonious in all its parts, and gradually developed. The Scriptures of the Old and New Testaments being thus regarded, and the supposition of conflict between the doctrines of their different books, or of error in any of them being rejected as inconsistent with a full recognition of their divine inspiration and authority, the doctrine in question is unavoidably deduced from them. It is found in the narrative of the Fall in Genesis, and the name *serpent* is again applied to the D. in the book of Revelation, where he is described as 'the old serpent, he that is called the devil and Satan' (Rev. xii. 9); he is believed to be repeatedly mentioned in the Old Testament. The hypothesis of an extra-Jewish origination and development of the idea of the D. would by some, be repudiated, while by others it would be deemed of small importance either way; probably most divines would consider it more probable that the Persians borrowed from the Jews, or transmitted the remains of some primitive revelation now lost, than that the Jews borrowed from the Persians. The mention of the D. in the New Testament is held to be conclusive, not only of his existence, but of the belief in that existence (even when not expressed or hinted at) among the older Jews; though not necessarily conclusive as to their early belief in all the accumulated tenets of later times regarding the devil. The warnings and exhortations addressed to Christians are, it is also said, framed on the supposition of dangers arising from his violence, power, and subtlety. It is further argued, that the principal objections urged against the doctrine of the existence of a D. are substantially the same which present themselves to the mind as difficulties when we speculate on a fact, which, however, is beyond all question—the existence of moral evil.

DEVIL-FISH: see CEPHALOPODA: POULPE.

DEVIL'S ADVOCATE: see ADVOCATUS DIABOLI.

DEVIL'S DUST: name sarcastically given to old woolen materials manufactured into some variety of cloth: see SHODDY.

DEVIL-WORSHIPPERS: see YEZIDEES.

DEVIOUS: see under DEVIATE.

DEVISE, v. *dĕ-vīz'* [F. *deviser*, to commune, to dispose of—from OF. *devise*, a division, a project—from mid. L. *devisa*, a division of goods, mark, device: It. *divisare*, to think, to imagine (see DIVIDE)]: to form in the mind; to plan; to scheme; to give or bequeath by will; to contrive; to project: N. a will; a bequeathing by will; that which is bequeathed by will. DEVI'SING, imp. DEVISED, pp. *dĕ-vīzd'*. DEVI'SER, n. *-zėr*, one who. DEVI'SABLE, a. *-ză-bl*, that may be given by will. DEVISEE, n. *dĕv'ĭ-zē'*, the person to whom real estate is bequeathed. DEVI'SOR, n. *-zėr*, one who gives by will.—SYN. of 'devise, v.': to bequeath plan; imagine; excogitate; invent; discover; find out.

DEVISE', in Law: conveyance of land by will. As personal property or chattels are said to be bequeathed, so lands are said to be devised. It is said, *Co. Litt.* 111 b. n. 1, that, under the Saxon and Danish rule in England, the owners of land were entitled to convey their lands by will, It is certain that so soon as feudal customs were established in England, the testamentary power over land ceased; and from the Conquest to the reign of Edward IV., this species of property could be transferred by conveyance *inter vivos* only; but during the reign of the latter monarch, a new mode of transfer began to be adopted, called a conveyance to uses (q.v.). By means of this species of conveyance, a party wishing to convey land otherwise than the common law allowed, actually conveyed the land to another person to such *uses* as he should appoint. The equity courts then regarded the party in whose favor the conveyance had been made as a mere trustee, and obliged him to relinquish the land in favor of any one whom the original owner might appoint. The power of appointment thus remaining in the owner might be exercised by him in his will. From the time of Henry VIII. various changes were made in the laws concerning devise of lands, till by the Wills Act, 7 Will. IV., and 1 Vict. c. 26, devises of land were placed on the same footing as to execution as other wills, and will carry all landed estates belonging to the devisor at the time of his death. See WILL (in Law): also on the general subject, Jarman on Wills.

In Scotland, it is usual to convey lands by deed, which has, however, precisely a similar effect to a will, so that the difference between English and Scotch wills is chiefly formal. In different countries the power is subject to various rules: hence, where a person resides in one country, and is possessed of landed property in another, questions of jurisdiction frequently arise as to the law which shall govern the power of disposal. In these cases, it is now a recognized principle that the *lex rei sitæ* is that which must prevail.—See Story's *Conflict of Laws*, p. 719, *et seq.*

DEVITALIZE, v. *dē-vī'tăl-īz* [L. *de*, down; Eng. *vitalize*]: to deprive of vitality or life, as a part of an animal body.

DEVITRIFICATION, n. *dē-vĭt'rĭ-fĭ-kā'shŭn* [L. *de*, from; *vitrum*, glass; *faciō*, I make]: the decomposition of glass; a process by which glass is converted into a kind of white and opaque porcelain, effected by a very high temperature, and then cooling slowly.

DEVIZES, *dē-vī'zēz* (ancienly *Divisæ*, *Divisis*, *De Vies*): municipal borough in the middle of Wiltshire, England, near the Avon and Kennet Canal, 22 m. n n.w. of Salisbury. It lies high at the mouth of Pewsey Vale, between the thinly peopled tracts of Salisbury Plain and the Marlborough Downs. It has manufactures of snuff and malt, and agricultural steam-engines and implements, and is the seat of one of the most important corn-markets of the west of England. The Corn Exchange has standing-room for nearly 3,000 persons. The chancel of St. Mary's Church in D. is believed to be nearly as old as the Conquest. Roman household gods and coins have been found here. D. arose in a castle built by Roger, Bp. of Salisbury, in the time of Henry I. This castle, of which only the walls of one of the dungeons remain, was besieged and taken by Cromwell 1645. From the time of Henry VIII. till about 1820, D. was the seat of extensive cloth manufactures. Pop. (1881) 6,645.

DEVOID, a. *dĕ-voyd'* [OF. *desvuidier* and *desvoidier*, to empty out—from OF. *des* for L. *dis*, apart; *voidier*, to void—from L. *dis*, *vidŭŭs*, left alone]: empty; vacant; free from; destitute.

DEVOIR, n. *dĕv-wawr'* [F. *devoir*, to owe; *devoir*, duty—from L. *debērĕ*, to owe]: an act of civility or respect; service.

DEVOIRS OF CALAIS: *dĕv wawr' ov kăl'ĭs*, or *kâ-lā'*: the customs due to the king of England for merchandise brought to, or carried out of, Calais while the English staple (q.v.) was there.—*Cowel's Interpreter*. 'Merchants of the west may buy merchandises, so that they find sureties to carry them to the west or to Calais.'—2 Rich. II. st. 1. c. 3.

DEVOLVE, v. *dĕ-vŏlv'* [L. *devolvĕrĕ*, to roll or tumble down—from *de*, *volvo*, I roll—*lit.*, to roll down]: to pass over from one person to another, as by succession; to be delivered over to a successor; to fall upon or come to as by right. **DEVOL'VING**, imp. **DEVOLVED'**, pp. *-vŏlvd'*. **DEVOLUTION**, n. *dĕv'ō-lō'shŭn* [F.—L.]: removal from one person to another. **DEVOLVE'MENT**, n. the act of devolving.

DEVONIAN, a. *dĕ-vō'nĭ-ăn:* in *geol.*, a name applied to the marine division of the Old Red Sandstone, as extensively developed in Devonshire, England. **DEVONITE**, n. *dĕv'ŏn-īt*, a phosphate of alumina found in Devonshire.

DEVO'NIAN SYS'TEM: name proposed by Murchison and Sedgwick to replace the more characteristic and older term Old Red Sandstone, because the slaty and calciferous strata in Devonshire contain a much more copious and rich fossil fauna than the red arenaceous rocks of Scotland, Wales, and Herefordshire, with which they were shown to be contemporaneous. The older descriptive name, however, is still generally retained: see OLD RED SANDSTONE.

DEVONPORT, *dĕv'on-pōrt* (before 1824, called PLYMOUTH DOCK): parliamentary and municipal borough, maritime and fortified town, and naval arsenal, in the s.w. of Devonshire, on Stonehouse Creek, on the e. shore of the estuary of the Tamar (which is four m. long by half a mile broad, and called the Hamoaze), two m. w.n.w. of Plymouth. It stands on high ground, with ramparts defended by batteries. The s.e. and s. walls are 12 ft high, with three gates, and externally a fosse cut 12 to 20 ft. deep in the solid rock. The streets are regular, and the footpaths of marble. D. is supplied with water from Dartmoor by a circuitous route of 30 miles. It owes its importance to the dock-yard established here by William III., still one of the chief naval arsenals in Britain. Locally, the yard is in Devonport, though official documents and popular phraseology frequently refer it to Plymouth. The yard comprises six building-slips, for various rates of vessels. The docks cover an area of 100 acres, and have cost an enormous sum of money. The most recent basin was completed 1868. Rope-making, sail-making, and anchor-forging also are carried on. D. has residences for the port-admiral and governor, barracks for 2,000 men, a military hospital, telegraph establishment, victualling-office, and grand parade. D. has breweries, soap-works, and an extensive trade in refitting and victualling ships. It returns two members to parliament. Pop. (1881) of municipal borough, 48,745; of parliamentary borough, 63,870.

DEVONSHIRE, *dĕv'on-shĕr:* maritime county, in the s.w. peninsula of England, between the Bristol and English Channels; greatest length, 71 m.; greatest breadth, 68; average, 46; 2,590 sq. m., three-fourths being in pasture or arable. The n. coast, 60 m. long, is mostly steep and rocky; the chief indentation being Bideford Bay, 18 m. broad and reaching 8 m. inland. The s. coast, 100 m. long, also is lined with cliffs, and has Tor Bay, 3 by 3½ m., and Plymouth Sound, 3 by 3 miles. The general surface is hilly, and the table-lands of Dartmoor in the s. of D., Exmoor in the n.e. of Devon and n.w. of Somerset, and Blackdown in the e. of D., are high, heathy, and rocky. The lower hills are grassy. The loftiest eminence is Yes Tor, n Dartmoor Forest, 2,050 ft. The chief rocks are granite in Dartmoor, and devonian, carboniferous, and permian strata, with some silurian strata, magnesian limestone, greensand, chalk, and trap. Copper, tin, iron, and other metals occur, with potters' and pipe clays, Bovey coal, marble, gypsum, fluor-spar, and loadstone. The rivers are very numerous, the chief being the Exe, 54 m. long; Dart, 36; Tamar, 59; Tarridge, 53; and Taw. These rivers have tidal estuaries, 5 to 11 m long. There is an intermitting spring at Brixham. The climate is humid and equable

—cool in summer, and mild in winter. The great mildness of the s. coast in winter has made it a resort for invalids, especially those with pulmonary troubles. Here myrtles flourish in the open air, and, with a little care, the orange and lemon. From its humidity, D. is more grassy than Cornwall, and there are fine meadows along the rivers. In the south, especially in Exeter Vale, the soil is very productive. The chief crops are grass and clover, alternating with corn and potatoes. The fertile red loam of Exeter Vale produces wheat, barley, beans, pease, and flax. D. has much oak-wood and extensive orchards. It is famed for clotted cream and cider. The apple-trees grow on the hill-slopes and in the hedges. The chief manufactures are serges, linen, gloves, and lace; the chief exports are butter, cheese, cattle, and sheep. The red Devon breed of cattle is highly valued. Dartmoor mutton and Exmoor ponies are famous. D. has important pilchard, mackerel, dory, and salmon fisheries. The electric torpedo occurs in the estuaries. D. is divided into 33 hundreds, 470 parishes, and 17 poor-law unions. The chief towns are Exeter (the county town), Plymouth, Devonport, Tavistock, Tiverton, and Barnstaple. D. sends 13 members to parliament—8 for the county, and 5 for the first three of the above towns. D. has many British and Roman remains, as stone circles, dolmens, barrows, and camps. The Saxons failed to conquer D. till the 9th c. It was ravaged by the Danes in the 9th and 10th c., and by the Irish in the 11th c. At the Reformation, 1549, there were great disturbances in Devonshire. In 1688, the Prince of Orange landed at Torbay. Pop (1871) 601,374; (1881) 603,595.

DEVOTE, v. *dĕ-vōt′* [L. *devōtus*, attached, faithful—from *de, vōtus*, vowed, wished for: It. *devoto;* F. *dévot*, pious]: to set apart by vow; to dedicate or consecrate; to doom; to execrate; to give up wholly; to apply closely to; to addict one's self to wholly or chiefly. DEVO′TING, imp. DEVO′TED, pp.: ADJ. ardently attached; faithful; doomed; addicted. DEVO′TION, n. *-shŭn* [F.—L.]: state of being consecrated or dedicated; acts of religious worship; careful performance of religious duties; ardent love and affection; ardor; eagerness; in *OE.*, act or visit of respect or ceremony, said of a superior. DEVO′TIONAL, a. *-ăl*, suited to devotion; pertaining to devotion. DEVO′TIONALLY, ad. *-lĭ*. DEVO′TEDNESS, n. state of being devoted. DEVO′TEDLY, ad. *-lĭ*. DEVOTEE, n. *dĕv′ō tē*, one wholly or superstitiously given to religion and religious exercises; a bigot. DEVO′TIONALIST, n., or DEVO′TIONIST, n. one who—same as DEVOTEE. DEVOTO, n. *dē-vō′tō* [It.]: a devotee.—SYN. of 'devote': to apply; addict; consign; destine; resign; set apart;—of 'devotion': consecration; addiction; attachment; affection; devoutness; religiousness; piety; devotedness; earnestness.

DEVOUR, v. *dĕ-vowr′* [F. *dévorer*—from L. *devorārĕ*, to gulp down, to devour—from *de, vŏrō*, I eat greedily: It. *divorare*]: to eat up; to eat with greediness; to consume; to destroy; to waste. DEVOUR′ING, imp.: ADJ. destroying; ravenous. DEVOURED′, pp. *-vowrd′*. DEVOUR′ER, n. one who. **Devour'ingly**, ad. *-lĭ.*—Syn. of 'devour': to annihilate; feast; use up.

DEVOUT, a. *dĕ-vowt'* [OF. *devot*, devoted—from L. *devōtus*, devoted (see Devote)]: earnestly attentive to religious duties; pious; sincere. **Devout'ly**, ad. *-lĭ*, with ardent devotion; piously. **Devout'ness**, n. state of being devout.—Syn. of 'devout': religious; holy; pure; earnest; solemn; prayerful; reverent.

DEW, n. *dū* [AS. *deáw;* Dut. *dauw;* Ger. *thau;* Sw. *dagg*, dew: Low Ger. *dauen*, to dew, to thaw]: the moisture deposited on the surface of the ground from the air at night, due to the rapid cooling of the earth's surface: V. to wet as with dew; to moisten. **Dew'ing**, imp. **Dewed**, pp. *dūd.* **Dewy**, a. *dū'ĭ*, like dew; moist with dew. **Dew'iness**, n. **Dew'less**, a. having no dew. **Dew-berry**, fruit of the gray bramble; the *Rubŭs cæsĭŭs*, ord. *Rosācĕæ.* **Dew-drop**, a drop or spangle of dew. **Dew-fall**, the time at evening when the dew begins to fall. **Dew-lap** [Dan. *dog-læp*]: the loose skin which hangs down from the neck of an ox. **Dew-piece**, a piece of bread, which in former times used to be given to farm servants, when they went out to work early in the morning. **Dew-point**, the temperature at which dew begins to form—that is, a temperature just too low to allow the air to retain all the moisture with which it is saturated. **Dew-stone**, a kind of limestone which gathers a large quantity of dew. **Dew-worm**, the common earth-worm, *lumbricus terrestris.*

DEW: atmospheric vapor condensed and deposited. For any assigned temperature of the atmosphere, there is a certain quantity of aqueous vapor which it is capable of holding in suspension at a given pressure. Conversely, for any assigned quantity of aqueous vapor held in suspension in the atmosphere, there is a minimum temperature at which it can remain so suspended: this minimum temperature is called the dew-point. During the daytime, especially if there has been sunshine, a good deal of aqueous vapor is taken into suspension in the atmosphere. If the temperature in the evening now falls below the dew-point, which after a hot and calm day generally takes place about sunset, the vapor which can be no longer held in suspension is deposited on the surface of the earth, sometimes visibly falling in a fine mist. This is one form of the phenomenon of dew, but there is another. The surface of the earth, and all things on it, and especially the smooth surfaces of vegetable productions, are constantly parting with their heat by radiation. If the sky is covered with clouds, the radiation sent back from the clouds nearly supplies an equivalent for the heat thus parted with; but if the sky be clear, no equivalent is supplied, and the surface of the earth and things growing on it become colder than the atmosphere. If the night be calm also, the small portion of air contiguous to any of these surfaces will become cooled below the dew-point, and its moisture deposited on the surface in the form of dew. If this chilled temperature be below 32° F., the dew becomes frozen, and is called *hoar-frost.* The above two phenomena, though both expressed in our language by the word dew, which perhaps tends to a confusion of ideas on the subject, are not necessarily expressed by the same word. For instance, in French, the first phenomenon—the falling evening-dew—is expressed by the word *serein;* while the latter—the dew seen in the morning gathered in drops by the leaves of plants, or other cool surfaces—is expressed by the word *rosée.*

The merit of the discovery of the 'Theory of Dew' has been commonly ascribed to Dr. Wm. Charles Wells, who published in 1814 his *Essay on Dew,* which was widely read. The merit should, however, be divided between him and several others. M. Le Roi of Montpellier, M. Pictet of Geneva, and especially Prof. Alex. Wilson of Glasgow, largely contributed by experiment and induction to its formation. Its history is very interesting, and the curious reader will be well repaid by a perusal of an article on the subject by Mr. Tomlinson of King's College School, London, in the *Edinburgh New Philosophical Journal* (New Series), vol. xiii., No. 1, 1861, Jan.

DEWAN, n. *dē-wawn'* [Pers. *dīwân*]: in *India,* a tribunal; a royal court; a council of state; a minister of state; a steward.

DEWAS, *dē-wâs':* town of Malwa, India, 24 m. n.n.e. from Indur. It is the cap. of a petty state or raj under British protection, held jointly by two chiefs of the lineage of the Puar or Rajpoots, once very powerful. Area of the state under both chiefs, 11,125 sq. m.; pop. (1881) 1,301,712.

DEW'BERRY (*Rubus cæsius*): plant of the same genus with the Bramble (q.v.), and very nearly allied to it, but having weaker and more prostrate roundish stems, which take root at the end, their prickles unequal and passing insensibly into hairs, the fruit consisting only of a few (1–5) grains, which, however, are much larger than those of the brambleberry. The name is derived from the dew-like, bluish bloom which covers the fruit. The D. is common in many parts of Europe and Asia. The fruit is very sweet and agreeable, and makes excellent wine. The D. of N America (*R. procumbens*), abundant in the forests of Canada, is a delicious fruit, much superior to the British fruit of the same name, and more tart. The plant is of very humble growth, scarcely rising above the ground.

Dewberry.

DEWEES, *dē-wēs',* WILLIAM POTTS, M.D.: 1768, May 5 —1841, May 18; b. Pottsgrove, Penn.: obstetrician. He took the medical course at the Univ. of Penn., and began practicing at Abington, 1789. In 1793, he removed to Philadelphia, made a specialty of obstetrics, and practiced with great success till 1812, when he temporarily engaged in agriculture, owing to impaired health. In 1826 he became adjunct prof. and 1834 full prof. of obstetrics and diseases of women and children in the Univ. of Penn., but in the latter year he had a stroke of paralysis which led him to resign the office. He spent some time in Cuba and Mobile, and returned to Philadelphia shortly before his death. He was author of *Medical Essays* (Phila. 1823), a *Treatise on the Physical and Medical Treatment of Children* (1825; 10th ed. 1854), *System of Midwifery* (1825; 12th ed. 1854), *Treatise on the Diseases of Females* (1826; 10th ed. 1854), and *Practice of Medicine* (1830).

DE WETTE, *dĕh vĕt′tĕh*, WILHELM MARTIN LEBERECHT: 1780, Jan. 14—1849, June 16; b. Ulla, near Weimar: German theologian. He studied at the Univ. of Jena. In 1807, he was appointed extraordinary prof. of philosophy at Heidelberg; 1809, prof. of theology; and 1810, was called to Berlin. By his popularity as a teacher, as also by his writings, De W. soon acquired great reputation. In 1819, on account of a letter which he wrote addressed to the mother of the assassin of Kotzebue, he was deprived of his chair. Not long afterward he was appointed prof. of theology in the Univ. of Basel, where his prelections and sermons in a short time secured general applause. In 1829, the grand council of Basel made him a member of the council of education, and granted him the freedom of the city. In 1849, he was elected rector of the university, but died the same year.

De W. was a man of comprehensive learning and acute philosophic discernment. His antipathy to the shackles of dogmatic theology gave keenness and vigor to his criticism. Yet he formed no school, and followed no master, so that it is difficult to describe his position. He cannot be classed with either Paulus, Strauss, or Baur. A temperate but very decided historical rationalism, on a broad basis of moral reverence, would perhaps best express his biblical stand-point. His principal works are: *Beiträge zur Einleitung in das Alte Testament* (Contributions to an Introduction to the Old Testament), 2 vols (Halle 1806–7); *Commentar über die Psalmen* (Commentary on the Psalms), Heidelberg 1811; *Lehrbuch der historischkritischen Einleitung in die Bibel Alten und Neuen Testaments* (Historico-Critical Introduction to the Books of the Old and New Testament), 2 vols. (Berlin 1817–26); *Lehrbuch der Christlichen Dogmatik* (Compendium of Christian Dogmatics), 2 vols. (Berlin 1813–16); *Christliche Sittenlehre* (Christian Ethics); *Vorlesungen über die Religion, ihr Wesen, und ihre Erscheinungsformen* (Lectures on Religion, its Essence, and forms of Manifestation), Berlin 1827; *Das Wesen des Christlichen Glaubens* (the Nature of the Christian Faith), Basel 1846; and *Exegetisches Handbuch zum Neuen Testament* (Exegetical Handbook of the New Testament). Beside these, De W. published a critical edition of the entire works of Luther.

DEWEY, *dū'ĭ*, ORVILLE, D.D., LL.D.: 1794, Mar. 28—1882, Mar. 21; b. Sheffield, Mass.: Unitarian minister. He graduated at Williams College 1814, and Andover Theol. Seminary 1819; was agent of the American Education Soc. some months; filled a temporary charge at Gloucester and became a Unitarian; was appointed asst. of Dr. Channing in Boston and preached in his pulpit two years; was pastor of the Unitarian Church in New Bedford 1823–34, and the Second Unitarian Church in New York 1835–49, and during the latter period his congregation built the Church of the Messiah; made two trips to Europe on account of ill-health; and filled brief pastorates in Albany, Washington, and Boston. His last public appearance was at the centennial celebration of the Congl. Church at Sheffield, 1876 June 18. He delivered courses of lectures before the Lowell Institute on the *Problem of Human Life and Destiny* and on the *Education of the Human Race,* which he repeated on invitation in many other places. A collected edition of his works in 3 vols. was published in New York (1847).

DE WITT, *dĕh-wĭt'*, JAN: statesman of Holland: 1625–1672, Aug. 20; b. Dort; son of Jacob De W., a vehement opponent of William II., Prince of Orange. Jan inherited his father's hatred of the office of stadtholder and of the family that filled it. His education was carefully attended to, and he soon showed remarkable ability. He was one of the deputies sent by the states of Holland 1652 to Zealand, to dissuade that province from adopting an Onange policy. There his eloquence secured him confidence, which, however, in such troublous times could not long be retained. In the same year he was made grand pensionary. The Orange party (supported by the populace and the clergy), during the war between England and Holland, was ever striving to increase the power of the young Prince (afterward William III.), then a mere infant; the republican, or oligarchic party, composed of the nobles and the wealthier burgesses, at the head of which was De W., sought, on the other hand, to strip the House of Orange of all power, and to abolish entirely the office of stadtholder. During William's minority, the advantage was, of course, with De W. and the republicans. In 1654, on the conclusion of the war with England, a secret article was inserted in the treaty between De W. and Cromwell, in virtue of which the House of Orange was to be deprived of all state-offices. After the restoration of Charles II., De W. leaned more to the side of France. This tendency necessarily received an impetus from the renewal of hostilities between England and Holland 1665. These lasted for two years; and though De. W. acted with great vigor, his influence was diminished, and his party was compelled to concede a larger measure of power to the House of Orange. De W.'s prospects became still more clouded when the designs of Louis XIV. upon the Spanish Netherlands became manifest. The Orange party carried their point in the elevation of William to the family dignity of stadtholder. On the invasion of the Netherlands by Louis XIV. 1672, the Prince of Orange was appointed commander of the Dutch forces; and the first campaign proving unfortunate, the popular clamor against De W. greatly increased, who had previously resigned his office of grand pensionary. His brother, Cornelius, accused of conspiring against the life of the stadtholder, was imprisoned and tortured. De W. went to see him on his release. When they were coming out of prison, they were attacked by an infuriated crowd, and both were murdered. The states-general demanded an investigation, and the punishment of the murderers, but the stadtholder did not take the necessary steps. De W. was personally of upright character. His *Memoirs* were published during his life. See the *History of the Administration of John De Witt*, by James Geddes (vol. I., 1880).

DE WITT, *dė wĭt'*, THOMAS, D.D.: 1791, Dec. 13—1874, May 18; b. Kingston, N. Y.: Dutch Ref. minister. He graduated at Union College, Schenectady, 1808, and at the New Brunswick (N. J.) Theol. Seminary, 1812, was immediately ordained pastor of several united Dutch Ref. congregations in Dutchess Co., N. Y., and after preaching there till 1827 became pastor of the Collegiate Dutch Church in New York. He preached there in the Dutch language till 1858, and continued there as senior pastor till death. He was an officer of the N. Y. Hist. Soc. many years, and its pres. 1872–74; pres. of the New York City Mission and Tract Soc., and director in the American Bible, American Colonization, and American Sunday-school societies, beside being connected with other charitable and educational institutions.

DEWSBURY, *duz'bėr-e:* manufacturing town and parliamentary borough in the West Riding of Yorkshire, England; at the base of a hill, on the left bank of the Calder; 32 m. s.w. of York, and 8 m. s.w. of Leeds. It is governed by a local board of health, has a chamber of commerce, and is the centre of the Dewsbury union. D. is noted for its manufactures of low woolen goods—as pilots, sealskins, unions, etc.; and carpets and blankets. There are collieries and ironworks in the immediate neighborhood. It is on the London and Northwestern, and Lancashire and Yorkshire railways. Calder navigation connects the town with Hull and Liverpool. Pop. (1881) 29,617.

BATLEY, near D. is the principal manufacturing town in the kingdom for low woolen and army cloths. It is governed by a local board of health, and has a chamber of commerce. It is on the Manchester and Leeds line of the London and Northwestern railway. Pop. (1881) 27,514.

DEXAMINE, n. *dĕks'a-mīn* [Gr. *dexamenē*, a receptacle, a reservoir]: small genus of crustaceans, family *Gammaridæ*, ord. *Amphipoda*, established by Leach.

DEXIA, n. *dĕks'ĭ-a* [Gr. *dexia*, the right hand]: genus of dipterous insects, type of the family *Dexiariæ*. DEX-

IARIÆ, n. plu. *dĕks-ĭ-är'ĭ-ē*, family of dipterous insects, which subsist chiefly on the juices of flowers.

DEXTER, a. *dĕk'ster* [L. *dexter*, right hand: Gr. *dexios*, on the right: Skr. *dakshina*, on the right, on the south, to one looking east: Gael. and Ir. *deas*, right, southern]: in *her.*, the right side of a shield or coat of arms—see *Note* under Escuage. Dextral, a. *dĕk'străl*, or Dex'trorse, a. *-strŏrs*, *right* as opposed to *left;* right-handed—applied to the direction of the spiral in most of the univalve shells.

DEXTER, *dĕks'tėr*, Henry Martyn, D.D., S.T.D.: b. Plympton, Mass., 1821, Aug. 13: Congl. minister. He graduated at Yale College 1840, and Andover Theol. Seminary 1844, and was ordained pastor of the Congl. Church at Manchester, N. H., the latter year. From 1849 till 1867 he was pastor of the Berkeley Street Congl. Church, Boston; from 1851 till 1866 was editor of the *Congregationalist*, and from 1859 till 1866 was editor of the *Congregational Quarterly*. In 1867 he resigned his pastorate in order to devote his whole time as editor-in-chief to the consolidated *Congregationalist and Recorder*, of which he still (1888) has charge. He was lecturer on Congregationalism at Andover Theol. Seminary 1877–80, and has been a member of the American Antiquarian and the Mass. Hist. societies since 1869, and of the American Hist. Assoc. since 1884. His publications are voluminous, and include contributions to ecclesiastical, historical, quarterly, and other periodical literature, and among others the following works: *The Moral Influence of Manufacturing Towns* (1848), *Temperance Duties of the Temperate* (1850), *Our National Condition and its Remedy* (1856), *The Voice of the Bible the Verdict of Reason* (1858), *What Ought to be Done with the Freedmen and the Rebels?* (1865) *Congregationalism: What it is, Whence it is, How it Works, Why it is better than any other Form of Church Government; and its consequent Demands* (1865; 5th ed. 1879), *A Handbook of Congregationalism* (1880), *Common Sense as to Woman Suffrage* (1885), and the first vol. of *A History of Old Plymouth Colony* (1887). He received the degree D.D. from Iowa College 1865, and S.T.D. from Yale 1880. He is an acute thinker, a vigorous writer, a careful scholar, and a successful editor. On the history and the principles of Congregationalism his works are recognized standards.

DEXTER, Timothy: 1743, Jan. 22—1806, Oct. 26; b. Malden, Mass.: merchant. He gained wealth in the leather dressing trade and the purchase and sale of continental money, assumed the title of 'Lord,' and entered on a career of marked eccentricity. He struggled in vain for social recognition in Boston, Salem, and Newburyport; fitted up a mansion in the latter place in a costly but grotesque style, spent $15,000 in furnishing his grounds with 40 columns, each supporting a colossal carved wood figure of some noted person including himself, kept a poet laureate, bought large quantities of books and paintings that he could not appreciate, indulged to excess in strong drink, and toward the close of his life repented of his follies and bequeathed his possessions to his neglected relatives. He published a book omitting from the text all punctuation marks, and adding several pages of them at the end for each reader to distribute at his pleasure—a stroke of criticism on the varying rules on that subject.

DEXTERITY, n. *dĕk-stĕr'ĭ-tĭ* [F. *dextérité*—from L. *dexteritātem*, dexterity—from *dexter*, right hand]: expertness; skill; readiness in the use of the manual or mental powers; adroitness. **Dex'terous**, a. *-stėr-ŭs*, expert; ready; skilful in manual acts; ready in the use of the mental faculties. **Dex'terously**, ad. *-lĭ.*, skilfully; expertly—sometimes spelt **Dextrous** and **Dex'trously**. **Dex'terousness**, n.—Syn. of 'dexterity': address; tact; cleverness; aptness; aptitude; faculty; activity; art: ability; facility; readiness; quickness; handiness.

DEXTRINE, n. *dĕk'strĭn*, or **British Gum** [L. *dexter*, right hand]: torrefied starch. When starch is carefully heated to 400° F., or until vapors arise from it, it becomes soluble in cold and hot water, and loses its gelatinous character; it also has the property, when viewed by polarized light, of turning the plane of polarization to the right; hence its name. It is often used as a substitute for gum-arabic in the processes of calico-printing, and for stiffening different goods; it is also applied to the back of postage-stamps. Its value as a substitute for gum consists in its being more flexible and less brittle when dry. Starch may be converted into dextrine by the long-continued action of dilute acids at a high temperature; also by the action of Diastase (q.v.). Dextrine and starch are isomeric, both being composed of $C_{24}H_{20}O_{20}$; but dextrine may be distinguished from the latter body by its pale buff color, its insolubility in alcohol, and its not being rendered blue by iodine, which gives with it a dingy purple tint. See British Gum.

DEXTROGYROUS, a. *dĕk-strŏj'ĭ-rŭs* [L. *dexter*, right hand; *gyrus*, a circle]: turning the plane of polarized light toward the right: see Lævogyrous.

DEXTRORSAL, a. *dĕk-strŏr'săl*, and **Dex'trorse**, a. *-strŏrs'* [L. *dexter*, right hand; *versus*, turned]: rising spirally from right to left. **Dextrose**, n. *dĕks-trŏs'*, a kind of glucose prepared by digesting starch or woody fibre in diluted sulphuric acid; the crystalline glucose or sugar of honey—so named because it deflects a ray of polarized light to the right when passed through its solution; starch-sugar; grape-sugar.

DEY, n. *dā* [Turk. *dâi*, a friendly title, formerly given to middle-aged or old persons]: title of the governor of Tripoli, also of Algiers before its occupation by the French. At one time, Tunis likewise was governed by a dey, but this title has long been supplanted by that of bey. See Beg.

DHALAC, *dâ-lâk':* island in the Red Sea, off the coast of Abyssinia; lat. 15° 46' n., long. 40° 6' e. It is 30 m. long, 15 m. average breadth, 120 m. in circumference. It is composed of coral rock, and its surface in general is flat and sandy. Doobelloo, a village on the e. side, trades with Loheia and Ghizan, ports on the Arabian coast, exchanging fish, sharks' fins, turtle, and pearls, for millet and dates. The groups of islands in the vicinity of D. are called the Dhalac Archipelago. The inhabitants are good sailors and skilful fishermen.

DHAMEE, *dâ'mē:* hill-state of India, about 25 sq. m. on the left bank of the Sutlej; about lat. 31° 12′ n., and long. 77° 8′ e. It is merely a collection of mountains and valleys. The general elevation probably exceeds 4,000 ft., and even the margin of the river is 2,283 ft. above the level of the sea. D. yields a revenue of about £800 a year, of which £36 are paid as tribute to the British government. Pop. 3,500.

DHAR, *dâr:* town on the table-tand of Malwa, Central India; lat. 22° 35′ n., and long. 75° 20′ e.; at an elevation of 1,908 ft. above the sea. It is said to have at one time consisted of 20,000 houses, implying a population of about 100,000, and though very greatly decayed, it retains many traces of bygone magnificence—two large mosques of red stone, ten water-tanks of various sizes, and a fort defended by many considerable towers.

It is the cap. of a protected state of the same name, having an area of 2,500 sq m ; pop. (1881) 150,000.

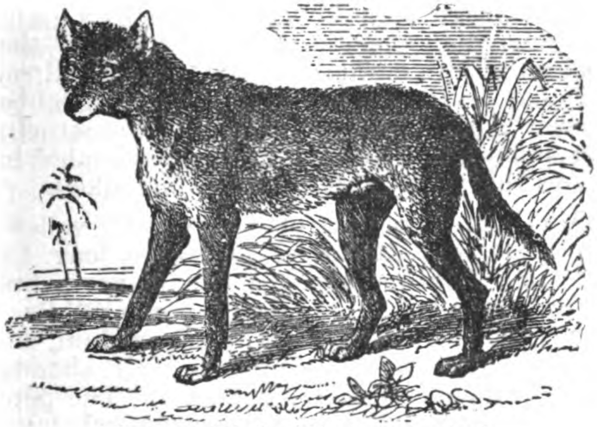
DHARWAR, *dâr-wâr':* district in the Southern Mahratta country, province of Bombay; 4,565 sq. miles. The inhabitants are mostly Hindus of the Lingayat sect, only 12 per cent. being Mussulman. There are many wild nomadic tribes in this district. Its drainage is divided between the Arabian Sea and the Bay of Bengal, passing to the latter by the Tumbudra, a feeder of the Kistnah or Krishna, and to the former by the Kali Nadi, through a deep valley of the Western Ghauts. The most interesting feature of the country is its suitableness for the growth of American cotton. In 1842, after several previous failures, the New Orleans staple was cultivated with success to the extent of 25 acres; and within five years, the breadth of land thus sown had increased a thousandfold. In connection with this enterprise, a good road has been constructed to Coompta, on the Arabian Sea, where the cotton is shipped for Bombay; hence commonly called 'Coompta cotton.' The prevalent language is Canarese, and there are a number of vernacular schools in the district. Pop. (1881) 882, 907.

DHARWAR: town in the Southern Mahratta country, province of Bombay, close to the frontier of Madras. The town, the centre of a cotton district, has no manufactures of importance, but considerable trade. It is the cap. of the dist. of D. Pop. (1881) 27,191.

DHAWALAGIRI, *dâ-wâ-la-ghē'rē:* mountain in Nepaul; formerly supposed the highest peak of the Himalaya, but now ascertained to be at most only the third in point of altitude. It is stated to be 26,826 ft. above the sea; lat. 28° 42′ n., and long. 82° 32′ east.

DHOB: see CYNODON.

DHOLE, *dōl* (*Canis scylax*): Indian species of dog, existing in a wild state in the W. Ghauts and some other mountainous districts. It is in size between a wolf and a jackal, with rather long legs, sharp muzzle, wide and pointed ears, straight and not bushy tail, light-bay color, fierce keen eyes, and great courage. The name D. is extended to some other very similar species or varieties, natives of Ceylon, Nepaul, and other parts of the East, to which the common name *Red Dogs* has been sometimes applied. and for which Colonel Hamilton Smith has proposed the sub-generic name *Chryseus*. They seem not incapable of domestication, but whether any of the domesticated dogs are derived from them is wholly uncertain. There is no reason to think that any of them are the wild offspring of once domestic races. They all lack the second tubercular tooth in the lower jaw, have oblique eyes, and the soles of the feet hairy. They hunt in packs. They all are inhabitants of the deepest recesses of wild mountain-forests. A remarkable characteristic of the dholes is their hostility to the feline races, the weaker and the young of which they attack and destroy. To this is ascribed the alarm which the tiger exhibits at the sight even of a domestic dog; and 'we may surmise,' says Colonel H. Smith, 'that the species of *Chryseus* are the instruments nature has appointed to keep down the superabundant increase of the great *felinæ* of the wilderness.'



The True Dhole (*Chryseus scylax*).

DHOLKA, *dŏl'kâ:* town of India, in the British dist. of Ahmedabad, presidency of Bombay. It is surrounded by a mud wall 4 m. in circuit. Pop. 20,000.

DHOLPORE, *dŏl-pōr':* town of Hindustan, on the left or n. w. bank of the Chumbul; lat. 26° 41′ n., and long. 77° 58′ e.; 34 m. s. of Agra, and 37 n. of Gwalior. Here are some elaborately wrought mosques and mausoleums of freestone. Of the former, one is said to have been built by Shah Jehan, the founder of the modern Delhi, 1634; and some of the other edifices, are of still earlier date.

D. is the capital of a protected state along the left bank of the Chumbul, containing 1,200 sq. m.; pop. 250,000.

DHOORCATEE, *dôr-kât-tē',* or DARKOTI: protected state in Hindustan, of not more than five sq. m.; lat. 31° 8′ n., and long. 77° 40′ e.; in the basin of the Jumna toward that of the Sutlej. Small as it is, it is worthy of notice as containing the peak of Toongroo, which, 10,102 ft. above the sea, forms one of the stations of the large series of triangles in the trignometrical survey of the Himalaya. Pop. of D. (1881) 590.

DHUBBOOEE, *dŭb-ô-ē′*: decayed town in Guzerat, belonging to the Guicowar; lat. 22° 8′ n., and long. 73° 25′ e.; 78 m. n.e. of Surat, 225 n. of Bombay. It presents many memorials of ancient grandeur—such as a rampart of two m. in circuit, backed inwardly by a handsome colonnade; a magnificent tank, bordered by a grand flight of stairs and numerous Brahmanical temples—the whole richly adorned with curious sculptures. A still more remarkable fact is, that, in a purely alluvial neighborhood, where even a pebble is unknown, all these structures are of hewn stone. The population, inconsiderable in number, shares the place with swarms of monkeys.

DHUMTOUR, *dŭm-tôr′*, or DUMTAUR′: valley of the Punjab; n. lat. from 34° to 34° 10′, and e. long. from 72° 55′ to 73° 15′. Here a traveller from the north first finds the peculiar vegetation of Hindustan. While behind him are luxuriant forests of oak, plane, walnut, and pine, the sugar-cane grows before him in such abundance as to be the principal fodder for cattle. The population is distributed into villages, each defended by a small fort against neighboring marauders. The chief town, of the same name, is 16 m. e. of the Indus, on the route between Attock and Cashmere.

DHUN′CHEE, or DHANCHI (*Sesbania aculeata*): plant of the nat. ord. *Leguminosæ*, sub-order *Papilionaceæ*, of a genus having an elongated many-seeded pod, alternately swollen and contracted, as if it contained a string of beads. The D. is an annual herbaceous plant, much cultivated in Bengal for its fibre; it has an erect, sparingly branched stem, 6–10 ft. high. It is of rapid growth, and thrives in low and wet soils. Its fibre is coarser than hemp, unless cut very early in its growth, is durable in water, but contracts considerably when wet. It is steeped and prepared much like Sunn (q.v.).

DHURRA, or DHOORRA, n. *dûr′ră* [Ar. *durah*]: a kind of millet cultivated throughout Asia and in northern Africa; an eastern measure of capacity.

DI, *dī*, [Gr. *di* for *dis*, twice]: a Greek prefix signifying 'twice.'

DIA, *dī′ă*, a Greek prefix signifying 'through or asunder; apart; between.'

DIABATERIAL, a. *dī-a-bā-tēr′ĭ-al* [Gr. *diabatēria* (sc. *hiera*), offerings presented before crossing a river-border, etc.: *diabainō*, I cross—from *dia*, through, and *bainō*, I go]: passing across or beyond the borders of a place.

DIABETES, n. *dī′ă-bē′tēz* (Gr. *diabētēs*, a siphon—from *dia*, through; *baino*, I go]: a disease causing an immoderate flow of saccharine urine. DI′ABET′IC, a. *-bĕt′ĭk,* pertaining to.—Diabetes is a disorder of the general system, of which the principal symptom is a greatly increased flow of urine. Diabetes is of two distinct kinds; the one, *diabetes insipidus,* is a mere exaggeration of the water-excreting function of the kidneys, accompanied by extreme thirst, and hence called *polydipsia* [Gr. excess of thirst] by some authorities; the other is a more complex disorder of the assimilation, consequent on the formation first, and the excretion by the kidneys afterward, of an enormous excess of animal sugar (see GRAPE-SUGAR), the sugar being found in excess, not only in the renal excretion, but in the blood, and in nearly all the secretions which have been examined. The pathology of this disease, called *diabetes mellitus* [Lat. *mel,* honey], is very obscure, notwithstanding the numerous recent physiological researches which tend to throw light on the development of sugar in the animal organism, and which must be regarded as bearing on the solution of the problem of this disease. Unhappily, the cure of it is still entirely unknown, except so far as it may be controlled or retarded by good management of the diet, drink, and clothing. All diabetics are subject to progressive emaciation, and often become subject to true tubercular consumption (q.v.), or other chronic disease of the lungs; it is chiefly in warding off this termination that the medical art can be of service, as well as in relieving the symptoms as they occur. The first fact observed in cases of diabetes is usually the increased flow of urine, when it becomes so great as to amount to a practical inconvenience; and also a considerable increase of the appetite, and an unquenchable thirst, which rarely fail to accompany the disease from the beginning, but often do not attract attention, or at least suggest the idea of anything wrong, till an advanced stage of the disorder. When the patient demands medical assistance, he is usually somewhat thin; the pulse is quiet, the skin cool, the heat of the surface, indeed, habitually rather low and easily depressed. There is often a complete absence of perspiration, which gives a peculiar feeling of harshness to the surface, especially of the palms of the hands. With these symptoms, the first approaches of pulmonary disease may concur. In the very last stages, there is sometimes dropsy of the feet; and the urine may be natural in quantity, or even diminished. For the other characters of diabetic urine, see URINE. The cure consists in removing from the diet, as far as possible, consistently with comfort and due nourishment, everything which easily turns to the formation of animal sugar in the system, especially all excess of farinaceous food. The complete suppression of sugar-forming food, however, as recommended long ago by Rollo, has not been found possible in practice in the majority of cases. Bread composed of gluten of wheat without starch, or bran-cakes baked with eggs, have been strongly recommended; and in most of the great capitals bakers may be found who regularly furnish bread suitable for this class of sufferers; indeed, any intelligent baker who will take the trouble, may, under medical direction, manufacture such bread when required; or it may be ordered in the form of cakes and biscuits, in quantities at a time, from the bakeries in the cities. Dr. Camplin, himself a diabetic patient, has minutely studied the diet and regimen required, and published a little book, of value to all concerned, *On Diabetes, and its Successful Treatment*, in which full directions are given for the manufacture of palatable and useful diabetic bread. The 'success' alluded to, however, is simply keeping the disease at bay by constant watchfulness. Medicines proper should be used only under the advice of the physician. There is no specific, and the unguarded use of strong remedies is to be condemned. Flannel should be worn next the skin, and the languid function of the cutaneous perspiration aided by the warm bath. The Turkish bath might possibly prove useful in this disorder, and could hardly do harm if carefully employed; but as yet no actual experiments in this direction are on record.

DIABET'IC SUG'AR: variety of sugar found in the blood and secretions of the higher animals, especially when afflicted with the disease called diabetes. It is a variety of grape-sugar or glucose. See GRAPE-SUGAR.

DIABLERETS, *dē-âb-lĕ-rā'*: remarkable mountain of the Bernese Alps, Switzerland, between the cantons of Bern and Valais; lat. about 46° 18′ n., and long. 7° 15′ e.; 10,670 ft. above the sea. The D. is composed of limestone strata, the lower beds of which are so soft and shaly, that they are easily disintegrated by the infiltration of water given off from the glaciers on the north east. The consequence is that, the foundation being worn away, the peaks tumble over into the valley, occasioning the most terrible catastrophes. Three peaks have already fallen in this way, and the two that remain threaten to follow sooner or later. In the fall in 1714, 15 people, 100 head of cattle, and 55 châlets were destroyed; and the result would have been much more appalling, had not premonitory noises given the inhabitants timely warning to escape. In 1749, the fall of another peak arrested the course of the Liserne, which thereafter formed two small lakes known as Derborenze.

DIABLERY, n. *dĭ-ăb'lėr-ĭ* [F. *diablerie*—from *diable*, the devil]: devilry; sorcery or incantation.

DIABOLIC, a. *dī'ă bŏl'ĭk*, or DI'ABOL'ICAL, a. *-ĭ-kăl* [L. *dĭăbŏlus;* Gr. *diăbŏlos*, the devil]: devilish; extremely malicious; atrocious. DI'ABOL'ICALLY, ad. *-lĭ*. DI'ABOL'ICALNESS, n. DIAB'OLISM, n. *-lĭzm*, the actions of the devil; possession by the devil.

DIACALPE, n. *dī-a-kăl'pē* [Gr. *dia*, across; *kalpē*, a pitcher, an urn]: genus of polypodioid ferns; natives of Java.

DIACATHOLICON, n. *dī-a-ka-thŏl'ĭ-kŏn* [Gr. *dia*, through; *katholikos*, universal]: the universal purgative; the old name given to an electuary composed of vegetable and carminative substances.

DIACAUSTIC, a. n. *dī'ă-kawz'tĭk* [Gr. *dīă*, through; *kaustĭkos*, having the power to burn]: in *geom.*, pertaining to curves formed by refraction: see CAUSTIC (in Optics).

DIACHYLON, n. *dī-ăk'ĭ-lŏn* [Gr. *dīă*, through or by means of; *chulos*, juice]: adhesive plaster formerly made from expressed juices, now made of a lead soap or mixture of litharge (red oxide of lead) and olive oil. It is now prepared on a great scale by machinery.

DIACHYMA, n. *dī'ă-kī'mă* [Gr. *dīă*, through; *chumŏs*, a fluid, juice]: the cellular tissue of leaves occupying the space between their two surfaces; the parenchyma of leaves.

DIACODIUM, n. *dī-a-kō'dĭ-ŭm* [Gr. *diakōdion*—from *dia*, through; *kōdeia* a poppy-head]: a preparation of poppies. SYRUP OF DIACODIUM, the former name of syrup of white poppies.

DIACONAL, a. *dī-ăk'ŏ-năl* [F. *diaconal*—from L. *dīăcŏnus* (see DEACON)]: pertaining to a deacon. DIACONATE, n. *dī-ăk'ŏ-nāt*, the office of a deacon.

DIACONICUM, n. *dī-a-kŏn'ĭ-kŭm* [Gr. *diakonikon*, pertaining to service—from *diakonus*, a servant, a deacon]: a place contiguous to the ancient churches, wherein were preserved the sacred vestments, vessels, relics, and ornaments of the altar; in modern language, the sacristy (q.v.).

DIACOPE, n. *dī-ăk'o-pē* [Gr. *diakopē*, a cutting in two—from *dia*, across; *koptō*, I cut]: in *gram.*, tmesis; the separating of two parts of a word by the interpolation of other words: as, 'Of whom *be* thou *ware;* in *surg.*, a longitudinal fracture or fissure of the cranial bone, or an oblique cut of the cranial integuments; in *ich.*, genus of acanthopterygian fishes of the perch family, many speeies of which inhabit the Indian seas.

DIACOUSTICS, n. plu. *dī'ă-kows'tĭks* [Gr. *dia*, through; *akouō*, I hear]: the science that treats of the properties of sound passing through different mediums.

DIACRITIC, a. *dī'ă-krĭt'ĭk*, or DI'ACRIT'ICAL, a. *-kăl* [Gr. *diăkrĭtĭkŏs*, having the power of discerning or distinguishing—from *dia*, *krino*, I judge]: that separates or distinguishes—applied to points or marks used to distinguish letters of nearly similar form, especially in Hebrew and the Semitic languages.

DIADELPHIAN, a. *dī'ă-dĕl'fĭ-ăn*, or DIADEL'PHOUS, a. *-dĕl'fŭs* [Gr. *dis*, two; *adelphos*, a brother]: in *bot.*, having the stamens united by their filaments into two distinct bundles, as in the DI'ADEL'PHIA, n. *-fĭ-ă*, the second class of the Linnæan system.

DIADEM, n. *dī'ă-dĕm* [F. *diadème*—from Gr. *diadēma*, a band or fillet for encircling the heads of kings—from *dia*, *dĕō*, I tie or bind]: a band or fillet of silk, woolen, or linen, for encircling the head, subsequently forming a badge or mark of royalty; a crown; figuratively, empire; sovereignty: V. to adorn with a diadem. DI'ADEMED, a. *-dĕmd*, crowned; ornamented.—The diadem was generally narrow, being only a little broader on the forehead. The diadem of the Egyptian goddesses and kings bore the symbol of the sacred serpent. The diadem of Bacchus, as it appears in antique sculptures, was a plaited band round the forehead and temples, tied behind, with the ends hanging down. Among the Persians, the diadem was bound round the tiara or turban, and was of a blue color worked with white. The early Roman emperors refrained from using this ornament, in order not to call up recollections of the hated kingly office. Diocletian was the first to introduce it again, and Constantine the Great added new ornaments to it. After his time, it was adorned with a single or double row of pearls and precious stones. Queens also are seen on coins, ornamented with the diadem with the addition of a veil. It was finally superseded by the Crown (q.v.).

DIADEMA, n. *dī-a-dē'ma:* genus of echinoids, typical of the DIADEMADÆ, *dī-a-dĕm'a-dē,* a family of regular echinoids, sometimes made to include the *Hemicidaridæ*.

DIADEM SPIDER: the Garden Spider, *Epeira diadema*.

DIADROM, n. *dī'ă-drŏm* [Gr. *dĭădrŏmē*, a running across —from *dia*, *drŏmos*, a course, a running]: a course or passing; time in which a pendulum performs its vibration.

DIÆRESIS, n. *dī-ē'rĕ-sĭs* [Gr. *diairĕsĭs*—from *diairĕō*, I divide—from *dia*, *airĕō*, I take]: in *grammar* the resolution of a diphthong, or of a contracted syllable, into two syllables; as Lat. *auræ* into *auraï*. The name is given also to the mark ¨ placed above the latter of two vowels, to indicate that it is to be independently pronounced, and not in conjunction with the preceding vowel; as in the word *aërial*.

DIAGLYPHIC, a. *dī-a-glĭf'ĭk* [Gr. *dia*, intens.; *gluphō*, I carve]: term applied to sculpture, engraving, etc., in which the subject is sunk into the general ground.

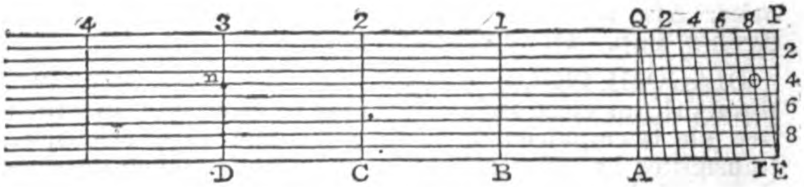
DIAGNOSIS, n. *dī'ăg-nō'-sĭs* [Gr. *dĭăgnōsis*, judging faculty, a distinguishing—from *dia*, through; *gignōskō*, I know: F. *diagnose*]: in *med.*, the through-knowledge or thorough knowledge of a disease, embracing its points of distinction from other diseases, its symptoms, their relation to one another, and to the state of the different organs and functions of the body, so far as this can be appreciated during life. Diagnosis is spoken of usually in contrast with Prognosis, which implies the judgment framed by the physician as to the issues of disease; and also with Prophylaxis [*pro*, from, and *phylaxis*, protection], which refers to the warding off disease, when supposed to be impending. Diagnosis includes the study of all the vital phenomena of diseases, and also of their appearances after death, so far as this can aid their discovery during life. It is usual to speak of rational or physiological diagnosis, or diagnosis by symptoms—i.e., functional changes; and of physical diagnosis, or diagnosis by signs—i.e., objective phenomena appreciable by the senses of the observer. The latter method of diagnosis has been much enlarged in scope, and increased in importance by the modern discoveries in Auscultation (q.v.) and Percussion (q.v.); also by the great advances made in physiological chemistry, and by the use of the microscope. DI′AGNOS′TIC, a. *-nŏs′-tĭk*, distinguishing the nature of a disease: N. the sign or symptom by which one disease is distinguished from others. DI′ AGNOS′TICS, n. plu. *-tĭks*, the study of symptoms by which one disease is distinguished from others. DIAGNOSE, v. *dī′ăg-nōz′*, to distinguish or determine a disease by its symptoms. DI′AGNOS′ING, imp. DI′AGNOSED, pp. *-nōzd*. Also DI′AGNOS′TICATE for DIAGNOSE. DI′AGNOS′TICATING, imp. DI′AGNOS′TICATED, pp.

DIAGOMETER, n. *dī-a-gŏm′ĕ-tėr* [Gr. *diagō*, I conduct through]: an electroscope invented by Rousseau, in which dry pile is employed to measure the amount of electricity transmitted by different bodies, to determine their conductivity. It is used to ascertain the conducting power of oils, as a means of detecting their adulteration.

DIAGONAL, n. *dī-ăg′ŏ-năl* [F. *diagonal*—from mid. L. *diagōnālis*—from Gr. *dia*, *gōnĭă*, a corner]: straight line drawn from one angle of a parallelogram to another opposite angle, and dividing the figure into two parts: defined in plane geometry as a straight line joining any two angles, not adjacent, of a rectilineal figure. A line drawn between two adjacent angles would coincide with their boundary-line. A triangle has no diagonal, because any two of its angles are adjacent; a four-sided figure has two diagonals; a five-sided, five; a six-sided, nine, etc. The number of possible diagonals in any figure is found by taking three from the number of sides, multiplying the remainder by the number of sides, and taking half the product. Thus, in the six-sided figure, the process is $\frac{3 \times 6}{2} = 9$. If the diagonals must be so drawn as not to intersect, their number is always three less than the number of sides. It makes no difference whether they all proceed from one angle or not. A diagonal in a solid bounded by planes, is a line joining any two solid angles so situated that the line does not coincide with any line on the surface. To find the number of such diagonals in a given solid: Multiply the number of solid angles by the same number diminished by one, and from half this product subtract the number of edges on the figure, also the sum of the number of diagonals in all the faces. Thus, the cube gives $\frac{8 \times 7}{2} - 12 - 6 \times 2 = 4$ diagonals. DIAG′ONAL, a. drawn from one corner or angle to another. DIAG′ONALLY, ad. *-lĭ*.

DIAGONAL CLOTH: a soft, woolen, twilled material, made in various colors, without any pattern. It measures 52 in. in width, and is much employed for decorative embroidery, and for gentlemen's clothing and ladies' jackets.

DIAGONAL SCALE: scale consisting of a set of parallel lines with other lines crossing them obliquely, by means of which hundredths of units may be laid down or measured with compasses. It is thus constructed: Lay off on a straight line, any equal parts EA, AB, BC, CD, etc. Draw 10 lines parallel to DE, and equidistant; and draw EP, AQ, B1, C2,...etc., perpendicular to DE. Divide QP, AE, into 10 equal parts. Join the 1st, 2d, 3d,...divisions on QP with the 2d, 3d, 4th,...divisions on AE respectively. If the divisions on AD each represent 100, each of those on QP will represent 10. Thus, from 3 on AD to 8 on QP is 380; but by moving the points of the compasses down to the fourth line, and extending them from *n* to o, the number will be 384. For the distance of 8 on QP from Q is 80, and of *r* from A is 90; hence that of *o* from the line AQ is 84. When the divisions on AD denote tens, those on QP denote units, and from *n* to *o* would then represent $38\frac{4}{10}$ or 38.4. When the numbers representing the lengths of the sides of any figure would give lines of an inconvenient size taken from the scale, the numbers may be all multiplied or all divided by such a number as will adapt the lengths of the lines to the required dimensions of the figure.



Diagonal Scale.

DIAGORAS, *dī-ăg'o-ras:* Greek poet and philosopher, of B.C. 5th c.; b. in Melos, an island of the Cyclades. Beyond his reputation for atheism, nothing positive is known of his career. He is said to have been a disciple of Democritus of Abdera, and to have resided in Athens during the more important part of his life. He is alluded to by Aristophanes in the *Clouds* (B.C. 424); and from an epithet applied there to Socrates, it is highly probable that that great philosopher had been a pupil of D., or at least held similar opinions. This perhaps explains the accusation brought against him of atheism. In all likelihood, D. was no atheist, but merely a *disbeliever in polytheism;* and the anecdotes related of him, such as his once throwing, when needing fuel, a wooden image of Hercules into the fire, to cook his dinner, serve to confirm such a supposition. He seems to have been witty and fearless, and probably treated the rude superstitions of the common-place Athenians with dashing contempt. In this way he may have become specially notorious, and so fixed himself in the Greek mind as the *representative* atheist. D. was banished from Athens professedly on account of his impiety, but really on account of his politics. He went first to Pallene, afterward to Corinth, where he died. He wrote lyrics of various kinds, and a philosophical work entitled *Phrygioi Logoi.* Personally, he was a man of untainted character, and discharged his duties as a citizen in an earnest and exemplary manner.

DIAGRAM, n. *dī'ă-grăm* [L. *diagramma*, a scale, a gamut: Gr. *diagramma*, a plant, a list—from *dia*, *gramma*, a mark, a sketch—from *grapho*, I write]: a figure represented by lines, as a triangle, a square, etc.; a figure; a plan.

DIAGRAPH, n. *dĭ'ă-grăf* [Gr. *dia*, through, across; *grapho*, I write]: an instr. used in perspective drawing. DI'AGRAPH'ICS, n. plu. *-ĭks*, the art of designing or drawing. DI'AGRAPH'IC, a. *-ĭk*, or DI'AGRAPH'ICAL, a. *-ĭ-kăl*, descriptive.

DIAL, n. *dī'ăl* [mid. L. *dĭālis*, daily—from L. *dĭēs*, a day]: instrument for measuring time by a shadow thrown by the sun or by the moon or stars. DI'ALLING, n. the art of constructing dials. DIAL-PLATE, the face of a watch or clock. DI'ALIST, n. a constructor of dials.—A *sun-dial* is an instrument for measuring time by means of the motion of the sun's shadow cast by a stile erected on its surface. It is of very great antiquity, the earliest mention of it being in Isaiah xxxviii. 8; and until clocks and watches became common, it was in general use as a time-keeper. The art of constructing dials to suit any place and situation, then an important branch of mathematical study, is now an object more of curiosity than utility.

Old Sun-dial:
In the former Zoological Gardens, Edinburgh.

A dial consists of two parts—the *stile* or gnomon, usually the edge of a plate of metal, always made parallel to the earth's axis, and pointing toward the n. pole; and the *dial plane*, which may be of any hard substance, and on which are marked the directions of the shadow for the several hours of the day, their halves, quarters, etc. Dials receive various names, according, mostly, to the positions which they are constructed to occupy. When the dial-plane is on the plane of the horizon, the dial is called a horizontal dial; when perpendicular to that plane, a vertical dial. An equinoctial dial is one whose plane is parallel to the equinoctial plane. Besides these names, there are others, such as the south dial, north dial, east dial, west dial, polar dial, declining dial, all depending on the position of the dial-plane. The cylindrical dial is a dial drawn on the curved surface of a cylinder. The ring dial is an ingenious small portable dial, but rather a curious toy than a philosophical instrument.

A *night* or *nocturnal dial* is an instrument for showing the hour of the night by the shadow of the moon or stars. Moon-dials may be constructed relative to the moon's motion; or the hour may be found by the moon's shadow on a sun-dial by the following rule: Observe the hour pointed out by the moon's shadow; find the days of the moon's age in the calendar, and take three-fourths of that number for the hours to be added to the time shown by the shadow to give the hour of the night.

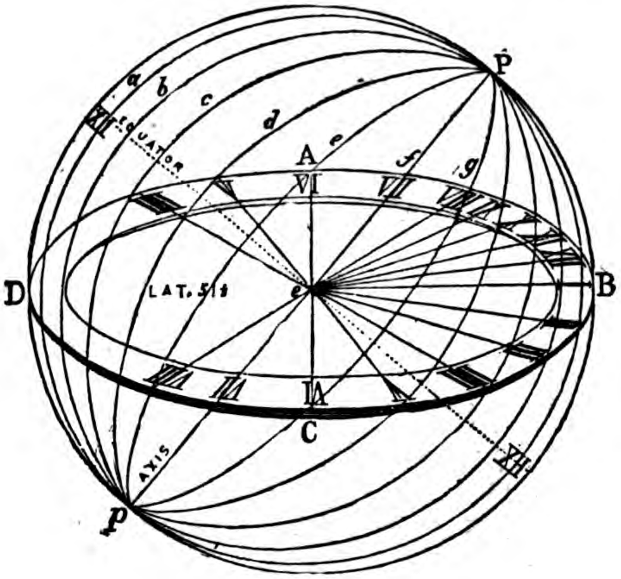


Fig. 1.

Dialling.—The *stile* of a dial being parallel to the earth's axis, those familiar with spherical trigonometry will readily see that the problem of constructing a dial resolves itself into that of ascertaining where the hour-lines cut a given circle, with a view to the graduation of the dial-plane. For fuller information concerning the principles of dialling, here presented only in popular form, see Ferguson's *Lectures* (4th ed., 1772, Lecture 10), here made use of. Suppose P*ep* (fig. 1), a hollow and transparent sphere, as of glass, to represent the earth; and suppose its equator divided into 24 equal parts by the meridians *a, b, c, d*, etc., one of them passing through a given place, say London (see Horizon), at the point *a*. If the hour of XII. be marked at the equator, both on the latter meridian and that opposite it, and all the rest of the hours in order on the other meridians, those meridians will be the hour-circles of London, because, as the sun appears to move round the earth in 24 hours, he will pass from one meridian to another in one hour. Then, if the sphere has an opaque axis, as P*ep*, terminating in the poles P and *p*, the shadow of this axis would fall, in the course of the day, on every particular meridian and hour, as the sun came to the plane of the opposite meridian, and would thus show the time at London, and at all other places on the same meridian as London. If the sphere were cut through the middle by a

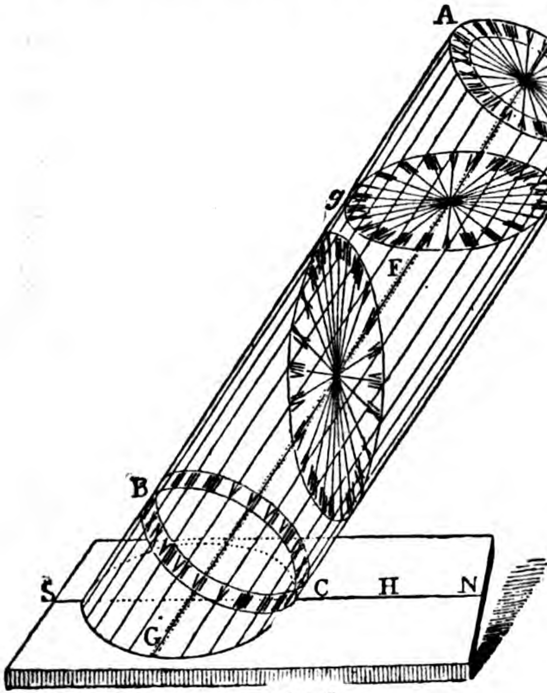


Fig. 2.

plane ABCD, in the rational horizon of London, and if straight lines were drawn from the centre, *e*, of the plane to the points where its circumference is cut by the hour-circles of the sphere, those lines would be the hour-lines of a horizontal dial for London; for the shadow of the axis would fall upon each particular hour-line of the dial, when it fell upon the like hour-circle of the sphere. Similarly, if we suppose the sphere cut by *any* other plane facing the meridian, the hour-circles of the sphere will cut the edge of the plane in those points to which the hour-lines must be drawn straight from the centre; and the axis of the sphere will cast a shadow on these lines at the respective hours. The like will hold of any plane, whether it face the meridian or not, provided it do not coincide with it, or do not coincide with a plane through the poles, and perpendicular to the plane of the equator. In the latter case, the axis would have no elevation above the plane of the dial; in the former, the shadow would not move circularly.

The *universal dialling cylinder*, an invention of Ferguson's, is represented in fig. 2. ABCD is a glass cylindrical tube, closed at both ends with brass plates, on the centres of which a wire or axis, EFG, is fixed. The tube is either fixed to a horizontal board, H, at an angle equal to the latitude of the place, or moves on a joint, so that it may be elevated till its axis is parallel to the earth's at any latitude. The 24 hour-lines are drawn on the outside of the glass, equidistant from one another, and parallel to the axis. The XII next B stands for midnight; the XII next the board, for noon. When the axis is adjusted for the latitude, and the board levelled, with the line HN on the meridian, and the end toward the north, the axis EFG, when the sun shines, will serve as stile, and cast a shadow on the hour of the day among the parallel hour-lines. As the plate AD is parallel to the equator, and EFG perpendicular to it, right lines drawn from the centre to the extremities of the parallels will be the hour-lines of an equinoctial dial, and the axis will be the stile. A horizontal plate, *ge*, if put into the tube, with lines drawn from the centre to the several parallels cutting its edge, will be a horizontal dial for the given latitude; and similarly a vertical plate fronting the meridian, and touching the tube with its edge, with lines drawn from its centre to the parallels, will be a vertical south dial, the axis of the instrument in both cases serving for the stile; and similarly for any other plate placed in the cylinder. If, instead of being of glass, the cylinder were of wood, any of these dials might be obtained from it by simply cutting it in the planes of the plates, and drawing the lines on the surface of the section.

DIALECT, n. *dī′ă-lĕkt* [F. *dialecte*—from Gr. *dialektos;* L. *dialectos*, speech, manner of speaking—from Gr. *dia*, *lego*, I choose, I speak]: the peculiar manner in which a language is spoken in a province or district of a country; style or manner of speech. **Di′alec′tic**, a. *-lĕk′tĭk*, or **Di′alec′tical**, a. *-tĭ-kăl*, pertaining to a dialect; logical. **Di′alec′tics**, n. plu. *-tĭks*, the art of reasoning; the branch of logic which teaches the rules and modes of reasoning. **Di′alec′tically**, ad. *-lĭ*. **Di′alecti′cian**, n. *-tĭsh′ăn*, a reasoner; a logician. **Dialectol′ogy**, n. *-tŏl′o-jĭ* [Gr. *logos*, a discourse]: that branch of philology which deals with the nature and relation of dialects. *Note.*—**Dialect**, in a country, is one of the numerous varieties of local speech on which its classical or literary language has been founded: *provincialism*, a word, phrase, or mode of speech peculiar to a district or province—thus really forming part of a *dialect*.—**Syn.** of 'dialect': language; idiom; tongue; speech; phraseology; provincialism.

DI′ALECT: particular local form or manner in which a language is spoken. In speaking of a people all having essentially one language, but an extensive territory, the name of Dialects is given to those varieties or peculiar forms which that language assumes among the various tribes or other local divisions of the people. The wider the separation and the greater the difference between the several tribes, in mode of life and other circumstances, the more marked will the differences of dialect become. Also when a particular tribe of this people increases in numbers, and extends its territory, the same process is repeated, and its dialect becomes broken into a number of sub-dialects. The principal check to this tendency to seemingly endless subdivision of language, is furnished by an increasing degree of common culture and civilization. Where this is wanting, as in Africa and among the native populations of America, the subdivision is practically endless.

Another element is introduced into the problem by the fact, that the civilization of some tribes develops itself more richly and ripens earlier than that of others, while some even undergo decline; this must occasion corresponding differences of dialect. Further, one dialect may become dominant over one or more of the others, through various influences, the chief of which is the power of poetry, especially if favored by external relations. Finally, if to superior manifestations of oratory and poetry in any dialect, the conservative aid of writing be added, there is created a written language, which passes current among other tribes to the same extent that the literature of which it is the vehicle finds favor. It is not always the dialect most perfect in itself, nor yet that of the most powerful tribe or division of a people, that comes to be the written language. Accidental circumstances have, in many cases, decided the rivalry. The Bible happened to be translated by a High German, Luther, into his native dialect; other works on the then all-engrossing subject of religion followed in the same dialect; happily, too, the art of printing had just attained the perfection necessary to give these productions general circulation. It was this concurrence of circumstances that decided that High German should in future be the spiritual bond among the wide-spread German people. For there were other dialects whose claims to the distinction were at that time equal, if not higher. See ENGLISH LANGUAGE.

When a dialect has thus become the vehicle of written communication, and of the higher kinds of oral address, its character and position become changed; and it stands henceforth in a sort of antagonism to the other dialects, and even to that out of which itself sprung. For written language is employed chiefly in the higher departments of human thought and activity. The intellectual and moral elements, therefore, predominate in it over the sensible; and what it gains in dignity, precision, and pliancy, it loses in richness of inflection, in friendly familiarity and naturalness. In conflict with this standard speech, the dialects must give place. They live for a considerable time, even in the mouth of the educated classes, becoming, however, gradually more and more confined to the most necessary and familiar forms of intercourse, and losing their characteristics in the stream of the written language. They thus become, after a time, the exclusive possession of the lower orders, in which position they preserve many relics of old grammatical forms long after these have disappeared in the language of literature, but without the power of advancing or of being enriched by the products of deep thinking; and though they may abound in single expressions of great beauty and delicacy, the general character comes to be low and coarse. But so long as a language lives, the literary standard and the dialects never cease to act and react on one another.

The chief points of difference between the dialects of a language and the standard fall under four heads. The first consists of differences in the elementary sounds or letters, each dialect having a tendency to substitute some one or more vowels or consonants for others. Thus, the standard English *bold,* is in Ireland *bowld;* in Scotland, *bauld; what,* where the *h* is nearly evanescent, becomes, in a Scotsman's mouth, or rather throat, *chwat,* and in Aberdeenshire Scotch, *fat—f* in this sub-dialect being regularly substituted for *wh,* or rather *hw.* 2. Each dialect has peculiarities of grammar: In many parts of England and in Scotland, the plural of *eye* is not *eyes,* but *eyen,* or *een,* like *oxen.* The habitual use of *be* where the standard grammar prescribes *am, is, are,* etc., is prevalent in large districts of England, and lingers in retired parts of New England. Of this kind is the use of the strong conjugation for the weak, or vice versâ; as *loup, lap, luppen,* for *leap, leaped, leaped.* 3. Peculiarities of vocabulary: These individual words current in one or more districts, but unknown to the standard vocabulary, are properly *provincialisms.* They are generally genuine words of an older stage of the language, that have survived longer in some localities than in others Some provincialisms, as *bearn* or *bairn,* for child, *marrow* for fellow or match, tó *greet* for to weep, are common to Scotland and the north of England. Others are more local, as to *cleam*, for to fasten or cement; *heppen*, a Yorkshire term for near; *thrippa*, in Cheshire, to cudgel. The exclusion of such words from the standard language is often accidental, and many of them might be and are with advantage resumed; ex., *marrow*, *gloaming*, etc. 4. Peculiarities of intonation: This is sometimes, though with little propriety, called accent, which means strictly the stress laid upon a particular syllable of a word. There are no doubt local peculiarities strictly of this kind too. The tendency of standard English, especially the more recent, is to throw the accent toward the beginning of the word; in Scotland, the tendency lingers to say *envy en'vy*. But peculiarities of intonation lie less in accent than in the different ways in which the *pitch* of the voice is managed—in the musical accompaniment of articulation. Differences in this respect give rise to the monotonous drawl of one district, the angry querulous tone of another, the sing-song of a third, etc.

So long as dialectic varieties of language were looked upon indiscriminately as corruptions and barbarities, they were noticed only by scholars and for avoidance. A more rational philology, without trenching upon the rules of good writing, now considers them as essential parts of the speech of a people, and a knowledge of them as necessary to any thorough investigation of the genius of that speech.

It is obvious that *Dialect* is entirely a *relative* term, and that what is called by that name in one connection, may be called a language in another connection. Thus, Greek and Latin may be called sister-dialects of that primitive language from which it is held that they, as well as the other members of the Indo-European family, branched off: see ARYAN (Languages). Greek considered by itself, however, it is a language; and Ionic, Doric, Attic, etc., are dialects of it. The same holds good with the others. In practice, however nearly related the speech of two people may be, the term dialects is not applied unless the peoples are mutually intelligible and have a common literary standard. Intelligibility is little considered, but political relations enter more or less into the notion. Thus, Scotch is sometimes spoken of as a distinct language from English; and yet in no part of Scotland is the common speech so unintelligible to an Englishman as is that of Somerset, which is always a 'dialect.' This arises from Scotland being still thought of as a separate country, which it formerly was; and its speech as the vehicle of a peculiar literature. See AMERICANISMS.—Dialect proper is not to be confounded with artificialities, such as the jargon or slang of thieves.

DIALEC'TIC: a Greek word which signified originally 'the art of conversation,' but came to have a technical signification in the language of philosophy. At first, it implied a regular and scientific method of treating general conceptions or general terms—a sort of anatomy of names, and through them of the things denoted. In the Socratic philosophy, and especially in that of Plato, D. was thus the method of the highest and deepest kind of speculation. Aristotle gave another signification to the word. According to him, a scientific proof or deduction is different from a dialectic proof, which is only a probable deduction. After this, D. came to imply a sort of word-fence, the art of so using the forms of reasoning as to confound your opponent, and make fallacies pass for truth. D. is used sometimes as synonymous with logic. Logic, however, which orginated with Aristotle, is properly the science of the forms of thinking; it is less directly concerned with words than D., which in this view becomes a subordinate province of logic—the art of disputation. D., in fact, is little heard of where philosophy is positive and experimental; it is used chiefly with regard to the more ideal and *à priori* speculations of such philosophers as Kant, Hegel, Schelling, etc.

DIALLAGE, n. *dī'ăl-lĭj* [Gr. *dĭăllăgē*, interchange—from *dia*, *allasso*, I exchange one thing for another]: figure of speech in which arguments are first placed in various points of view and then turned to one point.—**DIALLAGE**, or *Schiller-spar*, mineral nearly allied to augite (q.v.), and by some regarded as a variety of it; named from its changeable color. Its chemical composition is essentially the same. It is seldom found very perfectly crystallized, but usually massive, granular, or disseminated. It has generally a metallic and pearly or silky lustre. A very beautiful bright green D. (smaragdite), found in Switzerland, Italy, Corsica, India, Labrador, etc., is prized for ornamental purposes; in Corsica, it occurs dissemnated in a felspar (*Labradorite* or *Saussurite*), which when cut and polished, appears spotted with it, and is of great beauty, is made into boxes, vases, etc., is much valued, and is known by the names *Gabbro* and *Verde di Corsica duro*. A variety of D., usually yellowish or brownish, is sometimes called *Bronzite*. **DIAL'LOGITE**, n. *-jīt*, a mineral having a rose-red or flesh-red color, consisting chiefly of carbonate of manganese.

DIALLING, n: see DIAL.

DIALOGUE, n. *dī'ă-lŏg* [F. *dialogue*—from Gr. *dia*, *logos*, a word; *lego*, I speak]: a conversation between two or more persons; formal conversation, as in a play; written compositions in which persons are represented speaking. Dialogue implies greater unity of subject and formality than an ordinary conversation. The ancient Greek philosophers were fond of this way of conducting investigation and conveying instruction. The Socratic dialogue is a conversation in the form of question and answer, so contrived that the person questioned is led himself to originate those ideas that the questioner wishes to bring before him. The dialogues of Plato are, as it were, philosophical dramas, in which the Socratic method of investigation is brought to bear upon speculative subjects. The form of the dialogue is ill adapted to the modern state of science. Of the more eminent modern writers in this form, are Erasmus in Latin; Lessing, Herder, and Wieland among the Germans; Petrarch and Machiavelli in Italy; Fénelon and Fontenelle in France;

Berkeley, Hurd, and Harris in England. Landor's *Imaginary Conversâtions* are a happy effort of this kind. When dialogue is combined with action, the result is the drama. DIALOGUE, v. in *OE.*, to confer or discourse with another. DIALOGISM, n. *dī-ăl'ŏ-jĭzm,* a feigned conversation or discussion between two or more persons. DIAL'OGIST, n. *-jĭst-* one who speakes or writes in a dialogue. DIAL'OGIS'TIC, a. *-jĭs'tĭk,* or DIAL'OGIS'TICAL, a. *-jĭs'tĭ-kăl,* having the form of a dialogue. DIALOGICAL, a. *dī-a-lŏj'ĭ-kal,* pertaining to or of the nature of a dialogue. DIAL'OGIZE, v. *-ŏ-jīz,* to discourse in dialogue.—SYN. of 'dialogue': conversation; colloquy; conference: discourse.

DIALYCARPOUS, a. *dī'ăl-ĭ-kâr'pŭs* [Gr. *dialūō,* I part asunder; *karpos,* fruit]: in *bot.*, having a pistil or fruit composed of distinct carpels. DIALYPETALOUS, a. *dī'ăl-ĭ-pĕt'ă-lŭs* [Gr. *petalon,* a leaf]: having corollas composed of several petals. DIALYSEPALOUS, a. *dī'ăl-ĭ-sĕp'ă-lŭs* [Eng. *sepal*]: having a calyx composed of separate sepals; also DIAPHYLLOUS, a. *dī-ăf'ĭl-lŭs* [Gr. *phullon,* a leaf]: in same sense.

DIALYSIS, n. *dī-ăl'ĭ-sĭs* [Gr. *diălŭsis,* a dissolving or dissolution—from *dia, lŭō,* I loose]: a mark in writing or printing placed over one of the two vowels of a diphthong to show that the vowels are to be pronounced separately; in *chem.*, a process of analysis of a liquid by diffusion through organic membranes, or such artificial septa of organic matter as parchment-paper; the separation of crystallizable from uncrystallizable substances, a septum allowing the passage of the former and not of the latter (see OSMOSE); in *bot.*, the separation of parts usually joined. DIALYZE, v. *dī'ăl-īz,* to analyze by diffusion through organic membranes, or through parchment-paper. DI'ALYZ'ING, imp. DI'ALYZED, pp. *-īzd.* DIALYSATE, n. *dī-ăl'ĭs-āt,* the result obtained by dialysis. DI'ALY'ZER, n. *-lī'zėr,* the instrument employed. DI'ALYT'IC, a. *-lĭt'ĭk,* pertaining to.

DIAMAGNETIC, a. *dī'ă-măg-nĕt'ĭk* [Gr. *dia*, through, and *magnetic*]: term applied to many bodies, such as bismuth, which under the influence of magnetism, and freely suspended, takes a position at right angles to the lines of magnetic force. DI'AMAG'NETISM, n. *-măg'nĕ-tĭzm*, the the peculiar property of these bodies. The fact that iron is attracted by the magnet, has been known from very remote times; that bismuth exhibits a repulsive action toward the magnetic needle, has been known for nearly 100 years. Dr. Faraday was the first (1845) to show that all bodies are more or less affected by magnetic influence, and his beautiful researches on the subject have opened a new field in the domain of science. He found that the magnetism of bodies was manifested in two ways—either in being attracted by the magnet, as iron; or in being repelled, like bismuth. When a needle or slender rod of iron is suspended between the poles of a magnet, as in fig. 1, being attracted by them, it takes up a position of rest on the line *ab*, joining the two poles. When a substance behaves itself in this manner, it is said by Faraday to be *paramagnetic*, and to place itself *axially*, *ab* being the axis. A rod of bismuth, on the other hand, being repelled by the poles of the magnet, comes to rest in the line *cd*, at right angles to *ab*. Bismuth, and the like substances, he calls *diamagnetic*, and they are said to place themselves *equatorially*, *cd* being the equator. These terms, being both definite and graphic, have been universally adopted.

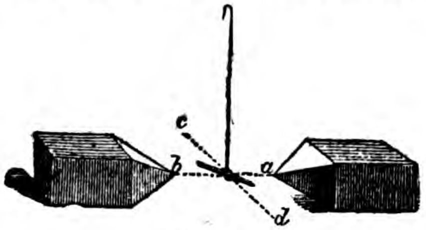


Fig. 1.

Magnetic is the term used by Faraday to indicate magnetism of either sort, though in general language it is understood to refer to paramagnetic bodies, such as iron, etc. Paramagnetic bodies, then, are those which manifest the same properties with regard to the magnet that iron does; and diamagnetic bodies are those which, like bismuth, show opposite but corresponding properties; so that in circumstances where paramagnetic bodies place themselves axially, diamagnetic bodies place themselves equatorially; and where the former are attracted, the latter are repelled, and *vice versâ*. A paramagnetic, therefore, not in the elongated form, but in a compact shape, such as a ball or cube, is attracted by either pole of the magnet, when suspended near it; a ball or cube of a diamagnetic so placed, experiences repulsion. The paramagnetism of iron, nickel, and cobalt, becomes manifest in the presence of magnets of ordinary power; but the magnetism of most other substances is so feeble as to be developed only under the influence of the strongest magnets. As electromagnets far exceed permanent steel magnets in strength, they are selected for investigations on the magnetism of bodies. Fig. 2. represents an electro-magnet which may be employed for this purpose. The soft iron horseshoe PPP, enveloped toward its extremities in the coils of insulated copper-wire *cc*, which communicate with a galvanic battery by the wires *w*, is fixed in an upright wooden frame. The ends or poles of the magnet rise slightly above the table or board which forms the upper part of the frame. In order conveniently to suspend substances between the poles, and to protect them while under observation from currents of air, a glass frame of simple construction, fig. 3, is made to fit the table. The upper plate of the frame admits a wooden ring, into which an upright glass tube is fitted. The thread by which the needle is suspended is wound round a slender movable bobbin at the top, so that it can be elevated or lowered to the proper position. To modify and direct the action of the magnet, two pieces of soft iron (fig. 1) are made to rest on the end faces; these are pointed at one extremity, and flat at the other, so that the force of the magnet may be concentrated in the points, when they are turned toward each other; or diffused over the opposite flat surface, when their position is reversed.

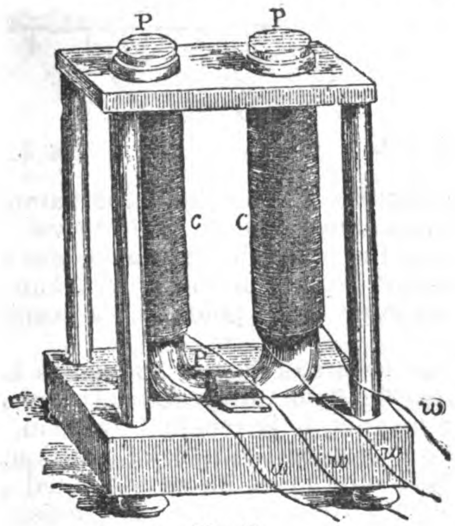


Fig. 2.

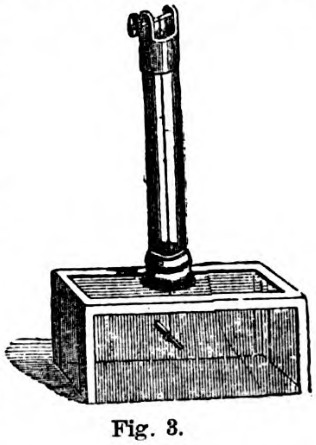


Fig. 3.

To observe the effect of the magnet on liquids, Faraday placed them in long tubes of very thin glass, and suspended them as in the case of solid needles. It was found that some arranged themselves axially, and others equatorially. The attraction and repulsion that liquids experience in the presence of the magnet has been prettily shown by Plucker. A large drop of liquid is placed in a watch-glass, figs. 4, 5, and laid upon two poles of the shape

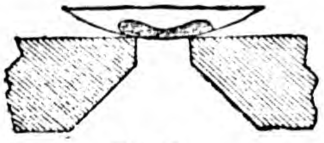


Fig. 4.

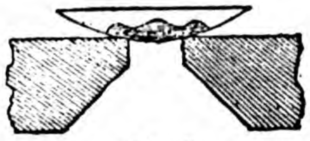


Fig. 5.

shown in the figures. If the liquid be paramagnetic, the surface becomes depressed at the interval between the poles, and heaped up over the extreme edges of them, fig. 4. A diamagnetic liquid, on the other hand, shows a depression at each edge of the poles, and a heaping up at the centre, fig. 5.

The magnetic nature of flames and gases has been also studied. When the flame of a candle is brought between the poles of a magnet, it is repelled by them, and thrown out horizontally into an equatorial position. To ascertain the magnetism of gases, Faraday inflated soap bubbles with them, and their para- or dia- magnetism was exhibited by their being attracted or repelled by the poles. He ascertained the same by causing the gases to flow out from glass tubes in the presence of the poles, when the peculiar magnetism of the gas was shown by its choosing an axial or equatorial means of egress.

The following list gives the kind of magnetism displayed by the more common substances.

Paramagnetic.—Iron, nickel, cobalt, manganese, chromium, titanium, palladium, paper, sealing-wax, peroxide of lead, plumbago, red-lead, sulphate of zinc, shellac, vermillion, charcoal, proto and per salts of iron, salts of manganese, oxygen, air.

Diamagnetic.—Bismuth, antimony, zinc, tin, cadmium, sodium, mercury, lead, silver, copper, gold, arsenic, uranium, tungsten, rock-crystal, mineral acids, alum, glass, litharge, nitre, phosphorus, sulphur, resin, water, alcohol, ether, sugar, starch, wood, bread, leather, caoutchouc, hydrogen, carbonic acid, coal-gas, nitrogen.

The nature of the medium in which the body under examination moves, exerts a powerful influence on the nature and amount of the magnetism it exhibits; thus, if a glass tube be filled with a solution of the proto-sulphate of iron, and suspended between the poles, it will place itself axially. It will do the same if made to move in water, or a solution more dilute of the proto-sulphate of iron. It will be indifferent in a solution of the same strength; but it will place itself equatorially in a stronger solution. Thus, the same substance may appear paramagnetic, indifferent, or diamagnetic, according to the nature of the medium in which it moves. As a general rule, a body shows itself paramagnetic towards one less paramagnetic than itself, indifferent toward one equally magnetic, and diamagnetic towards one more paramagnetic than itself.

The same takes place, *mutatis mutandis*, with diamagnetic substances. This has given rise to the theory, that there is no such thing as diamagnetism *per se*, and that bodies are diamagnetic only in media of greater paramagnetic power than their own. This view of the case is rendered highlyimprobable from the fact, that it is exhibited as decidedly in a vaccum as in any medium, and a vacuum cannot be supposed to possess magnetic properties of any kind.

DIAMANTINO, *dē-â-mân-tē'nō:* town in the province of Minas Geraes, in the diamond districts of Brazil: it is amid the head-waters of the St. Francisco, 5,700 ft. above the sea. Pop. about 7,000.

DIAMANTI'NO RIVER: significantly named, in the diamond districts of Brazil; apparently an affluent of the Paraguay, and, through it, of the Plata. It rises in the province of Matto Grosso, and is joined by the Ouro 70 m. n.n.w. of Cuyaba. At this confluence is a town named D.; pop. 4,500.

DIAMETER, n. *dī-ăm'ĕ-tėr* [OF. *diametre*, a diameter—from Gr. *diam'ĕtros*, a diagonal, a diameter—from *dia*, through; *metron*, a measure]: the measure of a body through from side to side; a straight line passing through the centre of a circle, having both ends terminated by the circumference. In geometry, Diameter is generally used in speaking of curves, and its most general definition is, a straight line bisecting all parallel chords in a curve. In the circle, ellipse, and hyperbola, all diameters pass through the centre, and are there bisected. Only the circle has all diameters equal; and each bisects the chords at right angles to it. In the ellipse, this last is the case with only the two diameters called the major and minor axes. In the parabola, all diameters are parallel to the axis. Many curves of the higher orders have no diameter at all. The term is applied also to the diameters of solid bodies of a round shape. In the sphere, lines passing through the centre are diameters, and so in the ellipsoid; they all are bisected in the centre. DIAMETRICAL, a *dī-ă-mĕt'rĭ-kăl*, straight; direct. DI'AMET'RICALLY, ad. *-lĭ*.

DIAMICTON, n. *dī-a-mĭk'ton* [Gr. *dia*, through; *miktos*, mixed]: the Roman method of building a wall, with regular ashlar work on the outsides, and filled in with rubble between. It is similar to emplecton, but without the diatoni or binding stones, which go through the thickness of the walls, showing on both sides.

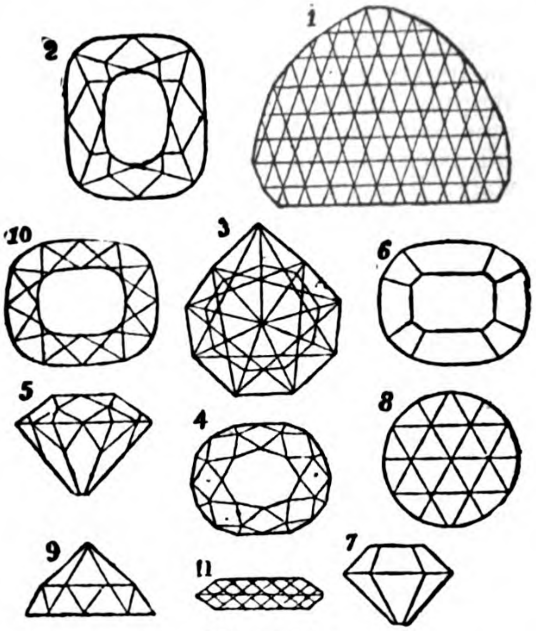
DIAMOND, n. *dī'ă-mŭnd* [F. *diamant*—from L. *ădămas*, a diamond: Gr. *ădămas*, the hardest steel, a diamond]: a crystallized variety of carbon, the hardest and most precious of all stones, clear and transparent; a cutter for glass, with a small diamond as the cutting point; a four-cornered figure, having two acute and two obtuse angles, as the pane in a church or cottage window; a rhombus: ADJ. resembling a diamond; in *printing*, a small type. ROSE-DIAMOND: see BRILLIANT and ROSE. DIAMOND-LENS, owing to its high refractive and small dispersive power, the diamond lens requires much less curvature than glass lenses of the same focal length. It therefore admits of the employment of a larger pencil of rays, and gives more light. A diamond and a plate-glass lens of similar form and radius are in their comparative magnifying powers as eight to three: see REFRACTION. DIAMOND CUT DIAMOND, cunning being outwitted by cunning—in reference to the fact that the diamond is so hard it can only be cut by another, or by the aid of diamond-dust. DIAMOND OF THE FIRST WATER, a diamond of perfect purity, colorless, and without flaw; a just and upright man.

DI'AMOND [corrupted from Gr. *adamant*, untamable refractory]: most valuable of precious stones after the ruby, and hardest of all known substances. It consists of Carbon (q.v.), a simple or elementary substance, crystallized, and in its greatest purity. Diamonds are generally colorless and clear like water; though sometimes, from some slight foreign intermixture, they are white, gray, yellow, green, brown, and more rarely orange, red, blue, or black. The lustre is adamantine and very high; the transparency perfect in specimens perfectly free from foreign substances, the presence of which, however, even in very small quantity, mars it, and sometimes almost produces opacity. The D. becomes positively electric by friction, but is not electrified by heat, a test which sometimes serves to distinguish it from the topaz. Its specific gravity is about 3·6. Its primary form is a regular octahedron, but it appears also in rhombic dodecahedrons; and its crystals often have curvilinear faces and edges. Its structure is distinctly lamellar. It burns before the blow-pipe in air or in oxygen gas, combining with oxygen to form carbonic acid. Its hardness renders it incapable of being scratched by any other substance, and in cutting and polishing diamonds, diamond-dust is employed. The estimation in which it is held as a precious stone is due to its rarity and to its remarkable hardness and brilliancy. The art of cutting diamonds, long practiced in India and China, was not known in Europe till after the middle of the 15th c., when it was discovered by Louis van Berguen of Bruges. Previous to that time, diamonds were set without being cut, in which state they have often a rough, dull, uneven surface. Diamonds are indeed found not only in the form of perfect crystals, but also in rolled grains; and they are obtained partly from alluvial soils and sands of rivers, and partly from rocks, chiefly a quartzy sandstone or conglomerate, in which they are often associated with gold. A number of localities in India have long been celebrated as productive of diamonds, particularly Golconda (q.v.); they are found also in Malacca, Borneo, and other parts of the East; nor were any diamonds procured in any other part of the world till the beginning of the 18th c., when they were discovered in remarkable abundance in the district of Serra do Frio, in the province of Minas Geraes in Brazil. In 1829, they were discovered in the Ural Mountains. They have been found also in N. Carolina; in Georgia; in the province of Constantine, Algeria; in Australia; and in s. Africa. In 1867, the first s. African diamond was recognized as such; and by 1881, stones to the value of abt. $115,000,000 had been found. The Kimberley mine, one of the 'dry diggings,' is more than 250 ft. deep. Of late, 650,000 natives have been employed in the diggings. Diamond mines consist generally of mere diggings and washings of alluvial deposits. In Brazil, tho method pursued is to rake the alluvial matter forward and backward on inclined planes, over which a stream of water is made to run, till the lighter particles are carried away, when large stones are picked out by the hand, and what remains is carefully examined for diamonds. Large diamonds are comparatively rare among those of Brazil. Brazil produces yearly from 25,000 to 30,000 carats of diamonds, of which, however, not more than 9,000 carats are capable of being cut, the rest being either very small or of inferior quality. A rotary drill, armed with impure, black diamonds, is now much used in boring rock, and is found very serviceable. The small and inferior diamonds are called Bort, and command ready sale for use in the arts, being pounded in a steel mortar, and much employed in the form of diamond-dust by lapidaries for cutting and polishing diamonds and all kinds of gems, and even for polishing rock-crystals for spectacles. Minute fragments or splinters of bort are also used for making fine drills, which are used for drilling small holes in rubies and other hard stones to be employed in watch-making, gold and silver wire-drawing, etc., and for piercing holes for rivets in china, in artificial enamel teeth, etc. The use of small diamonds by glaziers for cutting glass is well known. The diamonds so used are uncut, and they are so mounted as to act upon the glass not by an angle, but by a curvilinear edge of the crystal. The cut is only to the depth of about a two-hundredth of an inch, but is sufficient to make the glass readily break in accordance with it.

Diamonds are cut into various forms, principally into *brilliants* and *rose diamonds*. The *brilliant* cut is the most expensive and difficult, but is also that which best brings out the beauty of the stone; it has an upper or principal octagonal face, surrounded with many facets, and other things being equal, the greater the number of facets the more valuable is the diamond. The lapidaries of the East, however, sometimes multiply facets to hide imperfections of the stone. *Rose diamonds* have a flat base, above which are two rows of triangular facets, the six uppermost uniting in a point. Rose diamonds are made of those stones too broad in proportion to their depth to be cut as brilliants.

Stones still thinner are cut as *table diamonds.* The art of sawing diamonds, when too thick in proportion to their surface, was invented by a Dutchman named Dalbeck in the beginning of the 19th century.

The value of diamonds is variously estimated. The rule generally given is to square the number of carats the diamond weighs, and then to multiply by the price of a single carat. Thus, a rough diamond of 12 carats weight, one carat being estimated at $10, would be valued at 12 × 12 × 10 = $1,440. The value of a diamond is much increased by its being cut, though the actual weight is diminished. Beyond a certain weight, no rule of calculation can be applied, owing to the limited number of purchasers, and the most fabulous values have been assigned to famous diamonds. The price of diamonds varies according to the supply and changes in fashion, and is now lower than formerly.



Diamonds:

1, the Koh-i-noor; 2, Regent or Pitt Diamond; 3, Grand Duke; 4, 5, vertical and lateral appearance of the brilliant diamond; 6, 7, vertical and lateral appearance of the brilliant diamond before being recut; 8, 9, vertical and lateral appearance of rose-cut diamond; 10, 11, the table-cut diamond.

There is a way of falsifying diamonds by joining an under part of some other stone to an upper part of genuine diamond. Some varieties of sapphire, hyacinth, and topaz, are often passed off for diamonds. The first two may be distinguished by their greater specific gravity, the latter by its becoming electric when heated. Rock-crystal, and glass or 'paste' imitations, are lighter than true diamonds, and less hard and brilliant. The best test of a genuine diamond is hardness. Care must be taken, however, to avoid breaking off its angles, in testing it by scratching other substances with it, as, though hard, it is somewhat brittle.

Some particular diamonds, from their unusual magnitude, or from circumstances of their history, are of such interest as to entitle them to notice. The collection of the emperor of Brazil is said to contain an uncut diamond—the Braganza diamond—of the enormous weight of 1,680 carats, or about 12 ounces; but it is suspected to be only a fine colorless topaz.—The largest diamond certainly known is that belonging to the rajah of Mattan, weighing 367 carats. It is egg-shaped, with an indented hollow near the smaller end. Many years ago, the gov. of Borneo offered for it $500,000, two war-brigs fully equipped, a number of cannon, and a quantity of powder and shot. But the rajah refused to part with it, the fortunes of his family being supposed to be connected with it, and the Malays ascribing to water in which it has been dipped the power of healing all diseases. Perhaps the most famous diamond is the Koh-i-noor (q.v.), once a boasted possession of the Great Mogul, and now belonging to the queen of Great Britain. It is said to have weighed 900 carats in the rough; but now, after various cuttings, weighs 106 carats. The Orlow or Orloff diamond, belonging to the Russian emperor, once the eye of an Indian idol, is said to have weighed, when rough, 779 carats, but is now cut, egg-shaped, and weighs 192¼ carats.—The Regent diamond, or Pitt diamond, which weighs in its cut state 136¾ carats, is unrivalled in its limpidness and its form, its diameter and depth being nearly equal. It was found in Golconda, was brought from India by an English gentleman named Pitt, grandfather of the first Earl of Chatham, and by him sold to the Duke of Orleans for £130,000. It decorated the hilt of the sword of state of the first Napoleon, was taken by the Prussians at Waterloo, and now belongs to the king of Prussia.—The Sanci diamond, weighing 106 carats, has a still more interesting history. It belonged to Charles the Bold, Duke of Burgandy, who wore it in his hat at the Battle of Nancy, where he fell. A Swiss soldier found it, and sold it to a clergyman for a gulden. It passed into the possession of Anton, King of Portugal, who was compelled to sell it, the price being 100,000 francs. When owned by a French gentleman named Sanci, it was sent as a pledge to King Henry III. The servant carrying it was attacked by robbers and slain, but swallowed the diamond; and the master, causing the faithful servant's body to be opened, found the diamond in his stomach. This diamond came into the possession of the Crown of England, and James II. carried it with him to France 1688. Louis XV. wore it at his coronation. In 1835, it was purchased by a Russian nobleman for £80,000. The Porter Rhodes diamond, found at Kimberley, s. Africa, 1880, is of a remarkably clear blue-white. It weighs uncut 150 carats, and is the largest found in this century; as a brilliant, it would be about 100 carats: $300,000 was offered for it in vain.

DI'AMOND, ARTIFICIAL: facsimile of a true crystal, cut or molded from various substances. The high price, universal popularity, and knowledge of the simple chemical composition of the diamond, have led many scientists and others to costly and tedious experiments to discover a means of producing them artificially. The nearest approach to a chemical reproduction was made by M. Despretz, who succeeded only in obtaining microscopic crystals similar in hardness to the powder of diamonds, which like the natural dust disappeared in combustion without leaving any perceptible residue. The most common counterfeits are of rock-crystal and glass, the latter being technically known as paste. These are not so hard nor so brilliant as true crystals; but when mounted in small polished cups or with a backing of tin foil they throw out considerable sparkling light and are quite attractive. The artificial D. is largely used in finger and ear rings, breastpins and studs, and some are so cleverly cut and polished that they would deceive any one not an expert. Within a few years it has become quite common for ladies possessing true crystals of value to have their jewelry sets exactly duplicated with 'paste stones,' and these are worn in crowds and at places where the owners would be unwilling to expose the genuine ones.

DIAMOND BEETLE (*Curculio imperialis*): coleopterous insect of the tribe to which the name WEEVIL is generally appropriated, but remarkable for the splendor and exquisite beauty of its colors, in which it is thought to be unrivalled even among coleopterous insects. It is of a golden-green color, with two black longitudinal bands on the thorax, and several rows of depressed spots on the elytra (wing covers), which exhibit a beautiful and sparkling green with intervals of black. It is a native of warm parts of S. America.

Diamond Beetle (*Curculio splendens*).

DIAMOND HARBOR, *dī'a-mond hâr'bor:* the port of Calcutta for large ships; on the left side of the Hoogly, about 30 m. below Calcutta, with which it is connected by an excellent road and by electric wires. As the adjacent country is swampy and unhealthful, the spot is marked by only a few native huts. The commercial value of the locality, however, is likely to increase, in proportion as the silting up of the river above impedes the upward navigation.

DIAMOND NECKLACE, THE: wonderful piece of jewelry, made in Paris about 1775, and intended for Madame Du Barry, favorite of Louis XV. She, however, was excluded from court on the death of Louis (1774), before the necklace was finished. After being made, this beautiful ornament, adorned with 500 diamonds, was discovered to be so costly that no one could purchase it. It was valued at 1,800,000 livres, which in present money is equal to about £80,000, or nearly $400,000.

The Prince Cardinal de Rohan, a wealthy, vain, and profligate man, persuaded by a woman named De Lamotte, who waited about court, that the queen (Marie Antoinette) regarded him with an eye of favor, became so infatuated with the idea, that he was ready to do anything, however extravagant, in order to preserve this feeling in the queen. De Lamotte had stated to the cardinal that the queen was desirous of obtaining this glorious necklace, and that not having sufficient money just then, she would sign an agreement to purchase it if the cardinal would become security. The cardinal consented. The agreement was approved and signed with the royal signature, as also with that of the cardinal, who, 1786, Feb. 1, carried the treasure to Versailles, where it had been agreed that the queen should send for it. On the following day, a person, dressed in the uniform of one of the court valets, entered the apartments of the cardinal, and repeating as he entered the words, *de par la reine*, 'in the name of the queen,' he advanced to the table whereon the casket containing the treasure lay, and bore it away. In a few days De Lamotte, her husband, and the *soi-disant* valet, all having disappeared from Paris, were busily engaged separating the diamond necklace into portions, and selling them. The whole transaction had been a trick; the messages from the queen, verbal and written, were without foundation, the latter, indeed, being forged by the 'valet,' who was skilled in imitating handwriting. The plot was discovered by means of the maker of the diamond necklace, who, not receiving any money when the period of the first instalment had arrived, went to court, demanding to know if the necklace had been delivered to the queen. In a few months the cardinal found himself in the Bastile, where those by whom he had been duped had been already sent. In 1786, May, the trial of the prisoners was brought to a close. De Lamotte was branded on each shoulder with the letter V (for *voleuse*, thief), and was sentenced to be imprisoned for life. All the others were acquitted. The queen was falsely supposed by the populace of Paris to have been implicated in the plot, and the odium resulting from it was cast upon her, even at the last, when she sat on the cart that bore her through a raging and cursing mob to the guillotine.

DIANA, n. *dī-ă'nă* or *dī'ā'nă:* in *anc. myth.*, Roman goddess, corresponding in most of her attributes to the Grecian Artemis. According to the myths, she was daughter of Jupiter and Latona, and twin-sister of Apollo. She was born, with her brother, on Mount Cynthus, in the isle of Delos, which till then had been a floating island, but was fixed by Neptune in its present place, that Latona might there give birth to her children in peace and safety from the persecutions of the jealous Juno. D. was worshipped by Greeks and Romans alike, as both a destroying and a preserving goddess. In the former capacity, she was represented as a full-grown virgin, armed with bow and arrows, with which she avenged herself on her enemies; as a preserving deity, she watched over the sick, and helped the unfortunate. Young girls, and women in childbirth, were the objects of her special care. She was herself beyond the allurements of love; and the ministers of her worship were vowed to lives of the strictest chastity. As sister of the sun-god Apollo, D. was regarded as the goddess of the moon; hence her Greek name *Selene*, and her Latin name *Lucina* and *Phœbe*. Her worship was conducted with splendid rites in different cities. Her temple at Ephesus was one of the seven wonders of the world: see EPHESUS. In Tauris (the Crimea), she was propitiated with sacrifices of human victims; and before her statue at Sparta, the public scourging of the Lacedemonian youth used to take place. In Arcadia, she was looked upon as the special patron of hunting, and all sylvan sports, and as such was represented in Greek works of art as a tall and handsome maiden, with long hair floating down her neck, drawing an arrow from her quiver with one hand, and with the other holding in a struggling deer. As goddess of the moon, she wears a long robe reaching to her feet, and bears on her brow a crescent moon.

Diana.

DIANA-MONKEY (*Cercopithecus Diana*): the *Simia Diana* of Linnæus, or Palatine-monkey of Pennant; an African species of monkey, so named from the crescent-shaped band, resembling that which poets and mythologists assign to the goddess Diana.

DIANCHORA, n. *dī-ăng'kor-a* [*di*, twice, twofold; Gr.

angkura, an anchor, a hook]: genus of fossil *Conchifera*, now called *Spondylus*.

DIANDRIAN, a. *dī-ăn'drĭ-ăn*, or DIAN'DROUS, a. *-drŭs* [Gr. *dis*, double; *aner* or *andra*, a man]: in *bot.*, pertaining to the class of plants DIAN'DRIA, n. *-drĭ-ă*, having two stamens.

DIANE DE POITIERS, *de-ân' dėh pwá-te-ā'*, DUCHESSE DE VALENTINOIS: 1499, Sep. 3—1566, Apr. 22; b. France: mistress of King Henry II. She was married to Louis de Brézé, Count of Maulévrier, and grand seneschal of Normandy 1512; attached to the court of Queen Claude, where she prevailed on Francis I. to spare the life of her father, under sentence of death for favoring the escape of the constable of Bourbon; left a widow with two daughters 1531; and when nearly 40 years old became the mistress of the dauphin. The court was ruled by her and the Duchess d'Étampes, the favorite of Francis, till 1547, when the dauphin succeeded to the throne, created her Duchess of Valentinois, sent her rival into exile, and permitted her the actual exercise of royal power and a decisive voice in the foreign affairs of the country. She exerted the utmost influence over the king till his death, and then retired to the palace at Anet built by him for her. She was a woman of great beauty, large intellect, and active philanthropy.

DIANELLA, n. *dī-a-nĕl'la* [from *Diana*, the goddess]: genus of *Liliaceæ*, tribe *Asparageæ*. They have drooping blue flowers, and occur in Australia and the south of Asia.

DIANO, *dē-â'nō:* town of s. Italy, province of Salerno, 45 m. s.e. of the town of Salerno. It occupies a beautiful situation on an isolated hill overlooking the river Calore, and in the fertile vale of Diano, which takes its name from the town. There are several churches and an old castle. The commune has a pop. of about 6,000.

DIAN'THUS: see PINK.

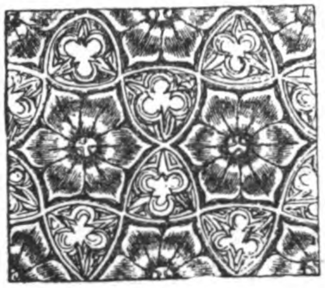
DIAPASON, n. *dī'ă-pā-sŏn*, in *OE.*, spelt DIAPASE, n. *dī'ă-pās* [Gr. *dĭăpāson*, through all—from *dia*, through; *pāsa*, all, *pasōn*, of all]: term in music by which the ancient Greeks designated the octave. In modern music D. denotes the range, or compass of the voice, or of an instrument. The French use the term as equivalent to *pitch*, and apply it also to a tuning-fork. Diapason is also the English name of certain stops of pipes in the organ of eight ft. pitch, which are considered the fundamental stops, of which they are generally two—a stopped diapason and an open diapason on each manual: see ORGAN-BUILDING.

DIAPA'SON REG'ULATOR: machine for registering the vibrations of a tuning-fork, and thus counting minute intervals of time. In M. Duhamel's arrangement a cylinder, by means of a screw-tapped end, was made to advance a little in the direction of the axis; this cylinder was covered with blackened paper, and was rotated by clockwork. A diapason (Fr. for tuning-fork) had a style or marker, made of a small bit of pointed spring, fixed to the end of one of the prongs. On the diapason being sounded in the usual way, and the spring placed lightly against the cylinder, the style traced a sinuous white line on the black paper. The sinuosities became visible representatives of minute intervals of time, the prongs vibrating hundreds of times in a second. M. Breguet then proposed clockwork to prolong the vibrating of the prongs, superseding the pendulum and the spiral spring by a diapason. For fuller details, see description of the apparatus in the *Revue Chronometrique*.

DIAPEDESIS, n. *dī′ă-pĕ-dē′sĭs* [Gr. *diapēdăō*, I ooze through—from *dia*, *pēdăō*, I spring, I leap]: the phenomenon of the passing of blood-corpuscles through the walls of the vessels without their rupture.

DIAPENSIA, n. *dī-a-pĕn′sĭ-a* [L. *diapente;* Gr. *diapente*, a fifth in music; so named by Linnæus, because the flowers are five-cleft]: genus of plants, typical of the sub-order *Diapensieæ*. DIAPENSIA′CEÆ, n. plu. *-ā′sē-ē*, nat. ord. of dicotyledonous plants, native of northern Europe and N. America.

DIAPER, n. *dī′ă-pĕr* [F. *diapré*, diapered: OF. *diaspre*, a stuff of jasper-color: It. *diaspro*, a jasper-stone, much used in ornamenting jewelry (*jasper* or *diasper*, see letter D), which stone being much used in ornamenting jewelry, originated the Mid. Lat. name *diasprus*, for a texture similarly ornamented or variegated]: in textile manufactures, a fabric with patterns of geometrical regularity, such as are produced by the kaleidoscope, woven in its texture, and produced with shafts and heddles, without the Jacquard machine: a napkin. DIAPER, v. to variegate or figure cloth. DI′APERING, imp. DI′APERED, pp. *-pĕrd*, flowered; variegated. DIAPER-WORK, or DIAPERING, in architecture, is a kind of decoration applied to plane surfaces, and consists of a small pattern either of flowers, leaves, or arabesques, carved or painted. The flower, or other object, is generally inclosed in a small frame; and these frames, which touch each other at the edges, constitute in themselves a sort of mathematical diapering. When the pattern is carved, it is generally sunk; and when painted, it consists of a darker shade of the same color as the plane surface, by which the effect of shadow is communicated to it. The accompanying illustration, from Bloxam's *Gothic Architecture*, exhibits a very beautiful example of decorated English diapering, from Canterbury Cathedral.



Diaper.

DIAPRÉ is applied in Heraldry to fields and charges, relieved by arabesque and geometrical patterns. These patterns were generally of a darker shade of the same tincture. This being merely an ornamental device, not affecting the heraldic value of the objects to which it was applied, was generally left to the fancy of the painter.

DIAPHANOSCOPE, *dī-a-făn′o-skōp:* dark box, constructed for exhibiting transparent photographs or other pictures. It may or may not be furnished with a lens.

DIAPHANOUS, a. *dī-ăf′ă-nŭs* [F. *diaphane*—from Gr. *diăphănēs*, transparent—from Gr. *dia*, through; *phaino*, I show]: allowing light to pass through; translucent; not quite transparent. Diaphanie, n. *dī-ăf′ă-nĭ*, a process for decorating glass by placing upon it colored designs on transparent paper. Diaphanom′eter, n. *-nŏm′ĕ-tėr* [Gr. *metron*, a measure]: instrument for measuring the transparency of the air.

DIAPHONICS, n. plu. *dī′ă-fŏn′ĭks* [Gr. *dia*, *phōnē*, a sound]: the doctrine of refracted sound. Di′aphon′ic, a. *-ĭk*, pertaining to.

DIAPHORESIS, n. *dī′ă-fŏ-rē′sĭs* [Gr. *dīăphorēsis*, a carrying through, perspiration—from *dia*, through; *phorĕō*, I carry]: an increase of perspiration. Di′aphoret′ic, a. *-rĕt′ĭk*, that promotes perspiration: N. a medicine which increases perspiration, by exciting the secretions of the skin. The simplest of all diaphoretics are baths of warm water, or of vapor, simple or medicated: see Baths. The most powerful of all, however, as regards educing perspiration, is probably the so-called Turkish bath, which consists essentially in the use of a sweating process, by means of air heated to a temperature of 140°, or even more. The following remedies, used internally, are powerful diaphoretics: antimony, ipecacuanha, opium (these three either singly or in combination); ammonia, and the carbonate or acetate of ammonia (spirit of mindererus), sarza, guiacum, dulcamara, and sassafras: see these titles. A favorite formula is Dover's powder, consisting of a grain of opium, and a grain of ipecacuanha in each ten grains of the powder. This in doses of from five to eight grains, followed by warm drinks and plenty of blankets in bed, usually produces copious perspiration, and is soothing and useful in many commencing inflammatory and febrile attacks. James's powder, in doses of from three to eight grains, is often added to the above in domestic prescriptions; but neither of these medicines should be used rashly, as in certain states of the system they may prove dangerous; and they should never be given to very young children.

DIAPHRAGM, n. *dī′ă-frăm* [OF. *diaphragme*, the midriff—from Gr. *diaphrag′ma*, a partition wall—from *dia*, *phrasso*, I hedge or fence in]: the midriff; a muscle or membrane separating the chest or thorax from the abdomen or belly; any substance that intercepts or divides; in *photography* and *optical instruments*, a partition with a hole in it, used for cutting off the superfluous rays of light and thus producing greater sharpness of the image, as well as to correct aberration. Di′aphragmat′ic, a. *-frăg-măt′ĭk*, pertaining to the diaphragm. Di′aphrag′mati′tis, n. *-mă-tī′tĭs*, inflammation of the diaphragm.

DI'APHRAGM, in Anatomy: the transverse muscle which, in man and the mammalia generally, separates the cavity of the thorax or chest from that of the abdomen or belly. In form, it is nearly circular; it is fleshy at its edges, tendinous in its centre, and ending in a point below. In front, it is attached to the ensiform cartilage of the sternum, or breastbone; laterally, to the inner surfaces of the six lower ribs; and posteriorly, to two tendinous arches on either side, termed the *ligamenta arcuata*, and to the anterior surface of the bodies of the second, third, and fourth lumbar vertebræ on the right, and only the second and third on the left side; these origins from the vertebræ forming two large fleshy bellies (termed the *crura*), which ascend to join the central tendinous portion. The diaphragm presents three principal openings: one quadrilateral, in the tendinous centre, for the upward passage of the inferior vena cava; one of an elliptic shape, formed by the two crura for the esophagus and pneumogastric nerves; and a third for the aorta, the azygos vein, and the thoracic duct.

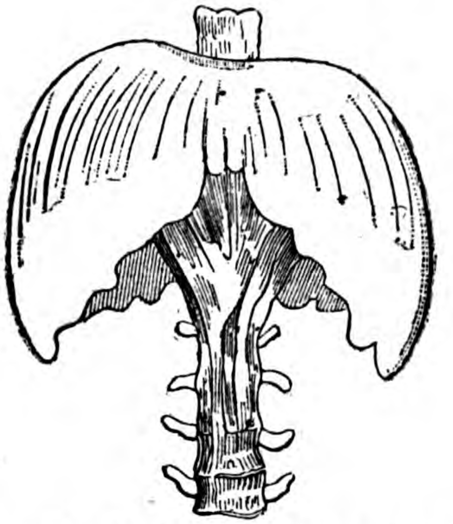


Fig. 1.—The Diaphragm in a state of repose. Anterior view.

The diaphragm is in relation superiorly with the pleuræ and pericardium, inclosing the lungs and heart; inferiorly, on the left side with the stomach and spleen, on the right with the convex upper surface of the liver; posteriorly, with the kidneys and supra-renal capsules and the duodenum; and by its circumference, with the ribs and intercostal muscles, with the sternum, and with the vertebral column.

It is convex superiorly, and concave inferiorly (fig. 1). When it contracts, its upward convexity approximates to a plane surface, and the cavity of the chest being thus enlarged, air rushes in to fill the partial vacuum, and expands the lungs during the act of inspiration (fig. 2). It is thus an inspiratory muscle, and is the sole agent in tranquil inspiration. The enlargement of the thoracic cavity caused by the contraction of the diaphragm, must obviously be associated with a corresponding diminution of the abdominal space. Hence this muscle, by its action on the abdominal viscera, aids in the expulsion of the fæces and urine.

Spasmodic action of the diaphragm produces hiccough and sobbing; and in laughing, the alternate contractions and relaxations of this muscle occur with increased rapidity. Stoppage of the action of the diaphragm, whether from great external pressure or from paralysis, is very speedily fatal.

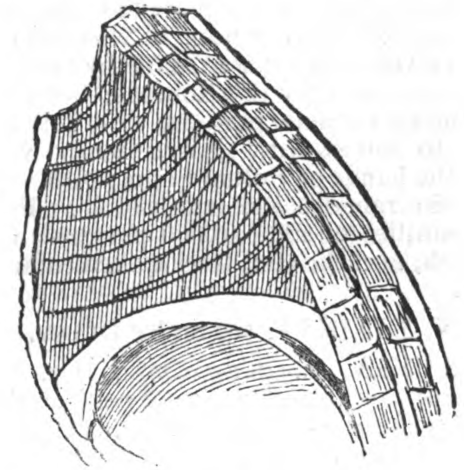


Fig. 2.—The Diaphragm in a state of contraction.
View of lateral section.

DIAPHRAGM SHELL: see SHELL.

DIAPHTHORAIMA, n. *dī-ăf-thŏr-ī'ma* [Gr. *diaphtheirō*, I destroy; *haima*, blood]: generic term for blood poisoning.

DIAPHYSIS, n. *dī-ăf'ĭ-sĭs* [Gr. *dīăphŭsis*, the state of growing between or through—from *dīă*, through; *phŭō*, I produce]: the central point of ossification for the shaft in the long bones; in *bot.*, the abnormal prolongation of the inflorescence.

DIAPORESIS, n. *dī-a-pŏ-rē'sĭs* [Gr. *diaporeō*, I am in doubt]: doubt, or hesitation, as to which of two subjects to begin with.

DIARBEKIR, *dē-âr-bė-kēr':* town of Asiatic Turkey, cap. of a vilayet of the same name; on the right bank of the Tigris, a short distance from the river, the intervening space being occupied by rich gardens; lat. 37° 55′ n., long. 39° 52′ e. The town, circular in shape, covers a considerable area, and is surrounded by high strong walls, flanked with towers, and pierced by four gates. The streets are dirty, and the houses for the most part are built of rough stone, plastered with a composition of mud and straw, but some of the better class are of black basalt. It has numerous handsome mosques, khans, and bazaars, and five Christian churches. Extensive manufactures of silk, cotton, and other goods, affording, with an active commerce between Aleppo and Bagdad, employment to about 40,000 families, were formerly carried on here; but the manufactures and trade have now greatly declined, and the population of D. does not amount to more than one-fifth of that number. The silk manufacture, which is now the staple, is said to be improving. D. occupies the site of the ancient *Amida,* which was a place of importance in the reign of Constantius, by whom it was strengthened and enlarged. In this reign it was taken by the Persians, from whom it was captured by the Romans; but in 502 the Persians once more became masters, and put 80,000 of the inhabitants to the sword. After many vicissitudes, it passed into the hands of Sultan Selim, 1515. Many Roman and Saracenic remains are still visible. Pop. comprises abt. 8,000 families (or abt. 40,000 persons); 6,300 families being Turkish, and the rest, Greek, Armenian, Rom. Cath. and Jewish.

DIARIAN, DIARIST: see under DIARY.

DIARRHÆMIA, n. *dī'ăr-rē'mĭ ă* [Gr. *dia,* through; *rheō,* I flow; *haima,* blood]: among cattle, a disease characterized by breaking up of the blood, ecchymosis, and secretions tinged with blood.

DIARRHŒA, n. *dī'ăr-rē'ă* [L.—from Gr. *diarrhoia,* a violent purging—from *dia, rhĕō,* I flow]: a looseness of the bowels; an excessive purging or flux. DI'ARRHŒT'IC, a. *-rĕt'ĭk,* pertaining to; purgative: N. that which produces a diarrhœa, or a purging.—Diarrhœa is a disease, or rather a tribe of diseases, characterized by an increase in the discharges from the bowels, which are usually unduly liquid, sometimes overcharged with bile, and sometimes the contrary. Diarrhœa has many varieties and many causes; but the whole tribe of diarrhœal diseases present certain relations in common, which have been studied of late years to a considerable extent from the preventive or sanitary point of view. Thus it is observed of all of these diseases, without exception, that they are more apt to prevail during summer and autumn than during the earlier seasons of the year; and it is also well established that their prevalence is to a great extent dependent on the intensity of the solar heat, so that a temperature above 60° F. seems to be almost essential, under ordinary circumstances, to their epidemic diffusion. Moreover, it has been shown that the decomposition of organic matters in the neighborhood of human dwellings, and the introduction of the products of decomposition into the food, drink, or air used by the healthy, has been a direct exciting cause of diarrhœa in a great number of instances where the disease has been locally epidemic; from which it is inferred that the real source of diarrhœal diseases is usually to be found in a morbid poison closely associated with the process of putrefaction, though not, perhaps, necessarily generated during that process.

It has been noticed that cold and wet seasons are least favorable to the production of diarrhœa, which is explained on the theory above alluded to by the rapid removal in such seasons of all organic débris; and there is little doubt that this explanation is correct, as the converse is equally true, the combination of heat with long-continued drought being almost sure to waken into life the epidemic seeds of diarrhœa. Again it is noticed that where drainage is imperfect, and drinking water impure, diarrhœal diseases are specially apt to occur (see CHOLERA); the class of the population most apt to be affected being those who occupy low levels, or who are otherwise exposed to the influence of this aqueous or gaseous poison. Infants are especially apt to suffer from diarrhœa, and a large number of the infantile deaths in many towns are caused either directly by this disease, or by the abuse of stimulants and narcotics for its cure.

Diarrhœa is either simple, bilious, or choleraic; for the last form, see CHOLERA. The ancients applied the name *lientery* to a diarrhœa in which the dejections consisted of matters not digested, or very partially so; this form is very unusual, at all events in this country. Dysentery (q.v.) also is a form of diarrhœal disease; as is the form of fever (q.v.) called gastric, typhoid, or enteric fever. Simple and bilious diarrhœa probably often differ only in degree; they are both distinguished from the advanced stages of cholera and dysentery by the presence of abundance of biliary coloring matter in the stools, and by the absence of the distinctive features of the other two diseases as described elsewhere. Diarrhœa frequently depends on organic disease, either of the intestines themselves, or of the liver, kidney, or spleen. It is also one of the most common symptoms of the advanced stage of consumption (q.v.).

When diarrhœa is plainly the consequence of improper food or drink, when it is very recent, when the strength of the patient is not much impaired, when there is much griping pain or distension of the belly, when the evacuations are very unnatural in character, and especially when they are dark colored and very fetid; when the disease has been preceded by habitual constipation (q.v.), and where there is no organic disease to be discovered, it is well to let diarrhœa run its course, at all events for a time, and either to aid it by small doses of very simple laxatives, or, in any case, to abstain from hastily checking the discharge, which in these cases is to be regarded as a truly curative and beneficent process, calculated to disburden the system of some poisonous or deleterious substance, and only requiring time for the restoration of the patient to health. In other cases, especially of febrile diarrhœa, an emetic of ipecacuanha at the very beginning will sometimes remove the disease with remarkable rapidity; and in most forms of diarrhœa it may be alleged that this medicine (in doses of from one to five or even ten grains) is well borne. Sometimes it is combined with opium in the form of Dover's powder. Vegetable astringents also, as catechu, kino, tannin, matico, logwood, are much employed both in acute and chronic cases;

some prefer the acetate of lead, with opium (which, however, is perhaps more suitable to dysentery). It should be observed that in some forms of diarrhœa the use of opium, though a most powerful remedy, is contraindicated by the state of the constitution; it should in no case be largely given without medical advice. In many chronic cases the metallic tonics and astringents are of service—e.g., iron, sulphate of copper, zinc, and bismuth. In a very large class of cases, especially of infantile diarrhœa, depending upon a too acid state of the secretions, the leading remedy is chalk, either in powder or in the very serviceable form of the mistura cretæ (mixture of chalk) of the pharmacopœias, from one to three desert spoonfuls of which may be given after every disturbance of the bowels. Lime-water, mixed with milk in the proportion of one to four or five, is easily given to very young children, and serves nearly the same purpose. See CHOLERA INFANTUM.

DIARTHROSIS, n. *dī'âr-thrō'sĭs* [Gr. *dia*, through; *arthron*, a joint]: in *anat.*, a joint or connection of two bones admitting of free motion between them, as those of the limbs or lower jaw. DI'ARTHRO'DIAL, a. *-dĭ-ăl*, of or pertaining to.

DIARY, n. *dī'ă-rĭ* [L. *dīārĭŭm*, a daily allowance—from *dĭēs*, a day: It. *diario*]: a register of daily events or transactions usually such as have reference to the writer personally; a journal. DIARIAN, a. *dī-ā'rĭ-ăn*, pertaining to a diary; daily. DIARIST, n. *dī'ă-rĭst*, one who keeps a diary. Among the most notable diarists are Evelyn and Pepys: the diaries of such men often furnish the historian with very valuable material.

DIASCHISMA, *dĭ-a-skĭz'mâ:* Greek name of a small musical interval which appears only in the mathematical calculation of greater intervals. The diaschisma is (1) the difference between the great half tone and the small *limma*, or the remainder when the latter is subtracted from the former, 2,048 : 2,025; (2) the difference between the *diesis* and the *syntonic comma*, also 2,048 : 2,025. The diaschisma and the small *limma* added together always make the greater half tone, or 16 : 15; and the *syntonic comma* added to the diaschisma always make the *diesis*, 128 : 125.

DIASPORE, n. *dī'ă-spōr* [Gr. *diaspeī'rō*, I disperse]: a mineral chiefly consisting of hydrate of alumina, of a greenish-gray color—so named from its decrepitating and dispersing when placed in a flame.

DIASTASE, n. *dī'ă-stās* [Gr. *dīăstăsis*, a standing apart, separation]: a peculiar ferment developed during the germination of all seeds. An impure solution of D. may be procured by adding one part of hot water to two parts of ground malt (see BEER), or freshly germinated barley, and, after its standing for a short time, straining it through a cloth. The proportion of D. in malt is not more than 1 part in 500 parts, yet it performs important functions. Thus D. has a powerful action upon starch, and at a temperature of 150° Fahr. one part is considered powerful enough to change 2,000 parts of starch into dextrine, and then into grape sugar. When obtained separately, D. is a white tasteless substance. See Germination.

DIASTEMA, n. *dī'ă-stē'mă* [Gr. *diastēma*, an interval]: a gap or interval, especially between teeth. Di'astem, n. *-as-tĕm*, in *anc. music*, a simple interval.

DIASTOLE, n. *dī-ăs'tŏ-lē* [Gr. *diastŏlē*, dilatation, extension—from *dia*, *stello*, I set or place]: the dilatation or opening of the heart after its contraction or *systole;* in *gram.*, the lengthening of a syllable naturally short; a point used to separate the syllables of one or two words. Di'astol'ic, a. *-tŏl'ĭk*, pertaining to.

DIASTOPORA, n. *dī-ăs-to-pōr'a* [Gr. *diastellō*, I open; *poros*, a passage]: genus of polyzoa or bryozoa, typical of the family *Diastoporidæ*. Diastoporidæ, n. *-ĭ-dē*, genus of polyzoa or bryozoa (two names for the same class).

DIASTYLE, n. *dī'a-stīl* [Gr. *diastulion*, the space between columns—from *dia*, between; *stulos*, a pillar]: arrangement of columns in Grecian and Roman architecture, in which the intercolumniation or space between them is equal to three or four diameters of the shaft.

DIATHERMAL, a. *dī'ă-thėr'măl* [Gr. *dia*, through; *thermē*, heat]: allowing rays of heat to pass through. Di'ather'mancy, n. *-măn-sĭ*, the property which certain substances possess of allowing rays of heat to pass through them, as rays of light pass through glass: see Heat. Di'ather'manous, a. *-măn-ŭs*, applied to bodies which allow rays of heat to pass through them, that is, to bodies which do not absorb rays of heat.

DIATHESIS, n. *dī-ăth'ĕ-sĭs* [Gr. *diathĕsis*, a disposing or putting in order—from *dia*, *tithēmi*, I put or place]: in the usage of old medical authors, the predisposition or constitution of the body which renders it prone to certain diseased states. Thus the tubercular, scrofulous, gouty, rheumatic, cancerous, or calculous diatheses, are described as something different from the corresponding diseases, but leading to these as natural or probable consequences, under certain conditions or exciting causes. The study of D. apart from existing disease, is almost always unsatisfactory, and leads to over-refinement and the pursuit of intangible abstractions, without due regard to evidence; inasmuch as the existence of a state which *is not* disease, but *leads to* disease, can rarely be established upon an unassailable basis.

DIATHYRA, n. *dī a-thī'ra* [Gr. *diathura*—from *dia*, through; *thura*, a door]: the vestibule before the room of a Greek house, corresponding to the prothyra of the Romans.

DIATOMACEÆ, n. plu. *dī'ă-tŏ-mā'sē-ē*, or Diatoms, n. plu. *dī'ă-tŏmz* [Gr. *diatomē*, dissection, division—from *dia*, through, asunder; *tomē*, a cutting—the filaments being divided into joints]: sub-order or tribe of algæ, provided with silicious envelopes containing protoplasm. Di'atom'ic, a. *-tŏm'ĭk*, in *chem.*, applied to radicals able to unite with two monad atoms. Diatomine, n. *dī-ăt'ŏ mĭn*, a buff-colored substance found in diatoms, which conceals the green color of the chlorophyll.

DIATOMACEÆ, *dī-a-to-mā'sē-ē*, or **Diatoms**, *dī'a-tŏmz:* group of organized beings, now generally regarded as of the vegetable kingdom, and ranked as a sub-order of *Algæ;* but formerly reckoned among animalcules, which view is still held by some naturalists. Lindley makes D. an order of his *Algal Alliance* of thallogenous plants, including *Desmidieæ* (q.v.) as a sub-order, and distinguishing the true D. as another sub-order, under the name *Cymbelleæ*. The D. are generally of brown color, though they frequently become greenish when dry. They are remarkable for their silicious covering, composed of two pieces or valves, and their angular shape, and are among the most beautiful and interesting of microscopic objects, exhibiting great variety of markings—striæ, dots, etc., regularly and symmetrically arranged. The valves, or pieces of the silicious covering, are always equal in length, but their sides often differ much in breadth. All within appears to be only a single cell; but many of these cells are often united or in contact, according to some mode of arrangement characteristic of the particular species. D. are found both in salt and in fresh water, also on the surface of damp rocks and walls, garden-paths, flower-pots, the glass of hothouses, etc. They may generally be obtained in great numbers by allowing water in which they exist to stand for a few hours, and then pouring off all except the more muddy or slimy part at the bottom. They may often be seen to move a little in the water or slime in which they exist, particularly those of most elongated form; and this was once regarded as a very conclusive evidence of their animal nature, but is now believed to be no more so than the movements of vegetable zoospores, and to be owing to their imbibing and emitting fluids in the processes of their vegetable life. They increase by division (whence the name diatomaceæ, Gr. through-cutting), which takes place not transversely but longitudinally; and the lines which mark its progress are almost always visible in them. In this process, new silicious valves are formed along the line of division, the old valves remaining on the outer sides, and each new diatom cell having an old valve and a new one. True reproduction takes place by Conjugation (q.v.), and by the formation of *Sporangia* (see Spore). D. very rapidly putrefy, but their silicious shields resist decomposition more perfectly than almost any product of organic nature, and are found in immense numbers in many marls, clays, and rocks. They are capable of resisting even the action of fire, and of the gastric-juice of the stomachs of animals, and are found in pumice and volcanic ashes, and in guano. The abundance of the D. as existing organisms, corresponds with what may be inferred from their remains in the oolite, chalk, etc., as to former geological periods. Britain is known to possess hundreds of existing species. Dr. Hooker found them in such numbers in the Antarctic Ocean as to give an ochreous brown color to its surface as far as the eye could reach, and to the icebergs floating in it; while a submarine deposit is in process of formation, composed of their silicious shields. Thus these minute organisms, unimportant as they may be deemed individually, fill no insignificant place, collectively, in the general scheme of creation.

Fossil D. have been observed in strata of every age. Though so minute in the individual, they form, in the aggregate, considerable thicknesses of rock—they have, in fact, in common with the associated and nearly as minute and simple organisms of the animal kingdom, the Foraminifera, produced greater changes, and left more lasting records than any effected by higher members of either kingdom. In the older rocks, D. have not been noticed in any quantity, their existence, however, in the clay-slates of the Lower Silurians was discovered by Mr. A. Bryson, and has since been noticed by other observers. In Tertiary strata they occur in abundance. There is good reason for believing that the silicious substance of flint was obtained largely from these organisms; many of their frustules may yet be discerned in it. Tripoli-stone consists entirely of their silicious plates, hence its value as a polishing agent. Several extensive deposits of tripoli are found in Bohemia—one at Egea is two m. in length, and averages 28 ft. in thickness; another at Bilin, forming the upper layer of a hill, is 14 ft. thick; it is composed chiefly of a species of *Gallionella*, with specimens of *Naviculæ*, etc.; as many as forty one thousand millions exist in every cubic inch of the stone! The city of Richmond, Va., is built on a stratum of diatomaceous earth, 18 ft. thick. Similar deposits are found in different localities in Britain, as at Premnay, Dolgelly, Lough Mourne, Raasay, and Mull. From the last locality, Gregory has given a catalogue of 150 species. The whitish powder of which the deposit consists is called in Sweden Bergmehl (q.v.), and is, in seasons of scarcity, mixed by the poor with their food, though probably without any advantage, save increasing its bulk. D. occur in more or less abundance in marl, peat, guano, estuary mud, and other recent deposits.

DIATONI, n. plu. *dī-ăt'o-nĭ* [Gr. *diatonos*]: angle-stones in a wall, wrought on two faces, and projecting between the general surface of the wall; the girders or band-stones; corner-stones.

DIATONIC, a. *dī'ă-tŏn'ĭk* [Gr. *diătŏnos*, extended through—from *dia*, *tŏnos*, a stretching of the voice, a sound—meaning 'by tones' or 'from tone to tone']: in *music*, in the ordinary scale; by tones and semitones, as distinguished from the *chromatic scale*, which proceeds by semitones only. The diatonic species of the ancient Greeks—apart from their chromatic and enharmonic species—formed the foundation of their whole system of music, and was arranged in tetrachords composed of one semitone and two whole tones. The diatonic scale of modern music is a combination of the Greek tetrachord, forming a succession of sounds progressing from degree to degree, by tones and semitones in a certain fixed order, neither omitting nor repeating; the position of the semitones varying, as the scale is major or minor.—DIATONIC SCALE IN COLORS, the spaces occupied by the seven primary colors of a solar spectrum, supposed by some to correspond in length with the strings that sound in the musical diatonic scale—a supposition without good foundation.

DIATRIBE, n. *dī'ă-trīb* [L. *diatrĭbă*, a place for learned disputations, a school—from Gr. *diătrĭbē*, a wearing away, a wasting of time—from *dia*, *trībo*, I rub or grind small: F. *diatribe*]: originally, a critical examination of a literary work; now, bitter or violent criticism; continued disputation; in *discourse*, an undue enlarging on some one point; a strain of abusive or railing language. DIAT'RIBIST, n. *-ăt'-rĭ-bĭst*, one who.

DIAZ, *dē'âs*, BARTOLOMMEO: a Portuguese navigator of noble birth; of the latter half of the 15th c.; d. 1500, May 29. His residence at the court of King John II. brought him into contact with many scientific men, among others the German cosmographer Behaim (q.v). D. took a great interest in geographical discovery, and his knowledge and abilities were so highly estimated, that the king gave him the command of two vessels to follow up the discoveries already made by Portuguese adventurers on the w. coast of Africa. D. soon reached the limit which had been attained in s. Atlantic navigation, and first approached land in 26° s. lat. After disembarking at various places, and taking possession of the shores in the name of the Portuguese king, he sailed round the extremity of Africa without suspecting it, and cast anchor at the mouth of the Great Fish river, a little e. of Algoa Bay. A storm now rose, and drove him into Algoa Bay. He there found, near Port Elizabeth, his companion-vessel, from which he had been separated before rounding the Cape; but unfortunately the greater part of its crew had been murdered by the blacks. He now, for the first time, noticed his discovery, and called the cape, in remembrance of his danger, *Cabo de todos los tormentos* (Cape of all the Storms)—a name which the king of Portugal afterward changed into its present, *Cabo de Buena Esperanza* (Cape of Good Hope). D. arrived in Lisbon 1487, Dec., and was at first greeted with enthusiasm, but soon saw Vasco da Gama preferred before him, and was compelled to act under the latter in the grand expedition of 1497. Vasco da Gama even sent him back to Portugal after they had reached the Cape Verd Isles, so that he had no share in the honor of discovering a maritime route to the Indies. Three years later, he joined the expedition of Cabral, discoverer of Brazil, but was lost in a storm.

DIAZ, *dē'âth*, PORFIRIO: b. Oaxaca, Mexico, 1830, Sep. 15: soldier and statesman. He received a classical education at the Oaxaca Institute, and had begun studying law when the war with the United States broke out. He served through that struggle in the national guards, and on the conclusion of peace made a study of military science. On Santa Anna's accession to the dictatorship, he left the army and practiced law, but returned and took a conspicuous part in the revolution of 1854. He served with the liberal party against the reactionists 1858; became a deputy in congress 1861; took the field to oppose the French troops and won a victory over them at Puebla 1862, May 5; took part in the defense of that city when beseiged by the French 1863, Mar.-May, was taken prisoner on the surrender, but made his escape; harrassed Maximilian's troops till forced to surrender a second time, at Oaxaca, 1865, Feb.; made his escape and with 900 men took 500 Austrian prisoners with their artillery and 700 stand of arms at the battle of Carbonera 1866, Oct. 15; besieged and captured Puebla 1867, April 2; and immediately marched on Mexico City, which surrendered to him June 21. On the re-establishment of the republic he was an unsuccessful candidate for pres. 1867. In 1872 and '76 he led revolutions against the govt., and after three severe battles occupied the capital in the latter year. In 1877 he was elected pres. to fill the unexpired term of the fugitive pres. Lerdo, ending 1880, Nov. 30. According to the 'plan of Tuxtepec,' which he had proclaimed 1875-76, he was ineligible to succeed himself. His sec., Gen. Gonzales, was elected pres., and Gen. D. was appointed chief justice of the supreme court and elected gov. of Oaxaca. In 1884 he was re-elected pres; in 1886 his partisans secured the abolition of the law prohibiting a second consecutive pres. term; and in 1888, July, he was elected pres. a third time. His administration thus far has proved a great benefit to Mexico, as he has successfully exerted his influence to secure for it a commercial and manufacturing standing worthy of its vast resources and in keeping with the general progress of the day.

DIBASIC, a. *dī-bā'zĭk* [L. and Gr. *dis*, twice, in two parts; and *basic*, from *base*]: in *chem.*, requiring two molecules of a base to one of the acid to form a saturated salt, thus sulphuric acid is *dibasic*.

DIBBLE, n. *dĭb'l*, or DIBBER, n. *dĭb'bėr* [the syllables *dib*, *dimp*, and *dip*, express the act of striking with a pointed instrument: Scot. *dab;* Norm. F. *diguer*, to prick]: implement for making holes in the ground in which to place seeds or plants. Its simplest form is a small round stick, a foot or more in length, one end of which is sharpened. A more elaborate D. consists of a handle and a head having several points covered with iron. With the latter form the operator walks backward, making holes with the D. into which the seeds are dropped. It is a slow and laborious method, not adapted to heavy soils. Several machines for dibbling were invented, but none of them came into general use. For seeding purposes the D. has largely been supplanted by the drill and hand seed sowers: see DRILL. In the United States the short D. is largely used by farmers and market gardeners in transplanting. The sharp end of the implement is forced into the ground with the right hand. The plant is taken in the left hand and inserted in the hole thus made, and the operation is completed by a thrust into the earth at the side of the plant by which the soil is compacted around the roots. DIBBLE, v. to plant with a dibble; to make holes; to dip. DIB'BLING, imp. *-lĭng.* DIBBLED, pp. *dĭb'ld.* DIB'BLER, n. one who.

DIBDIN, *dĭb'dĭn*, CHARLES: 1745–1814; b. Southampton, England: musician and poet. He was educated at Winchester, and at the age of 16 made his literary *début* in London, by writing an opera called *The Sheperd's Artifice*, produced at Covent Garden Theatre, where he afterward became musical manager. In 1879, he began a series of musical entertainments in the city, entitled *The Whim of the Moment*, which gained great celebrity. After several vicissitudes, he withdrew, in straightened circumstances, from public life in 1805, when government granted him, in consideration of his literary merits, a pension of £200. D. is an admirable writer of sea-songs, of which he composed about 1,200. Neptune, and not Apollo, seems to have inspired him. In fact, he is the only song-writer who has reached the heart of 'the mariners of England.' His verses smack of the briny deep, and reflect with astonishing felicity the easy, childlike virtues and the fearless courage of the English tar. It is known that they had a great effect during the war between France and England in supplying the navy with volunteers, and they have even been quoted in mutinies as aids to the restoration of order and discipline. Among D.'s happiest pieces are *Poor Jack* and *Poor Tom Bowling*. A comparatively late edition of D.'s songs, with a memoir by Thomas D., illustrated by G. Cruikshank, appeared 1850 (3d ed. 1863). D. wrote also a great number of dramatic pieces, etc. He left two sons, Charles D. (died 1833), and Thomas D. (died 1841), both of whom composed songs and dramas.

DIBDIN, THOMAS FROGNALL: 1776–1847, Nov. 18; b Calcutta; nephew of Charles D.: famous writer of sea-songs. He lost both parents when hardly four years of age, and was brought up by his mother's brother, a Mr. Crompton. He studied at St. John's College, Oxford, but left without taking a degree. After a short and unsuccessful career as a lawyer, he became a clergyman of the Church of England, 1804. From that period until his death he labored as a bibliographist with a diligence that would have been commendable if accompanied with better judgment and greater accuracy. D.'s principal works are an *Introduction to the Greek and Roman Classics* (1802), *Typographical Antiquities*, 4 vols. (1810–19), *Bibliomania* (1811), *The Bibliographical Decameron* (1817), *Bibliotheca Spenceriana* (1814), *Bibliographical, Antiquarian, and Picturesque Tour in France and Germany* (1821), *The Library Companion* (1824), and *Reminiscences of a Literary Life* (1836). All his books contain valuable and rare information, but are far from trustworthy in matters of detail. Many of them are exquisite in typography and artistic decoration.

DIBOTHRIAN, n. *dī-bŏth'rĭ-an* [*di*, twice; *bothrion*, a little pit]: one of the divisions of entozoa, including those tapeworms of the family *Bothriocephala* which have not more than two pits or fossæ on the head.

DIBRANCHIATE, a. *dī-brăng'kĭ-āt* [Gr. *dis*, twice; *brang'chĭă*, gills]: applied to an order of cephalopod (q.v.), including the cuttle-fish, in which two gills are present. Dī′BRANCHIA′TA, n. plu. *-kĭ-ā′tă*, the order.

DIBS, or DIBBS, n. *dĭbz* [OE. *dibs*, the small bones in the knees of sheep]: in *OE.*, a game played with the small joint bones of the legs of sheep, tossed up, and then caught first on the palm, then on the back of the hand: its antiquity is proved by figures on Grecian vases, on which women are seen kneeling and engaged in the sport: in Scotland, where the game is usually played with small pebbles or shells, it is called 'the chucks.'—D. in *familiar university slang*, money—said to be a corruption of *diobs*—from *dīōbŏlŏn*, a classic coin. TIP = money, may also be a corruption of DIBS. DIBS, or DIPS, in *Syria*, a sweet preparation made from the juice of the grape.

DICAST, *dī′kast:* member of the *dicasterion* of Athens, a kind of national jury, consisting of 6,000 citizens elected annually from the whole body of freemen, and divided into 10 sections, for the purpose of assisting in the administration of justice. In important causes the evidence, points of law, and antagonistic issues were developed before a magistrate, reduced to a concise statement of law and fact, and in this form laid before one of the sections for decision. The dicasts resembled modern jurors in that they were not supposed to have a previous knowledge of a case coming before them, and were sworn to render decisions according to the law and evidence.

DICE, n. plu. *dīs*, DIE, n. sing. *dī* [see DIE 2]: small cubes used in play. DICE-BOX, the box from which dice are thrown in gaming. DICING, n. *dī′sĭng*, playing at dice.

DICENTRA, *dī-sĕn′tra:* genus of beautiful herbaceous perennials of the order *Fumariaceæ*, common to a light, rich, and deep soil. Several wild specimens are found in moist woodlands of the United States, and are distinguished by their showy flowers, which bloom early in the spring. The *D. cucullaria* have cream-colored blossoms, tipped with white, and as they hang in clusters from the stalk, they resemble a pair of breeches suspended by the feet, and hence are sometimes called 'Dutchmen's breeches.' The *D. Canadensis* have greenish-white flowers, tipped with red, are very fragrant, and known as 'squirrel corn.' The *D. eximia* have reddish-purple flowers, larger than the others, and the *D. chrysantha*, of Cal., large golden-yellow ones. The most beautiful of all species is the *D. spectabilis*, which was introduced into the United States from Japan 1846. It has strong stalks, and produces rosy flowers an inch long, which from their peculiar shape and shade of color have received the name of 'bleeding heart.'

DICEPHALOUS, a. *dī-sĕf′ă-lŭs* [Gr. *dis*, twice; *kephălē*, the head]: having two heads on one body.

DICERAS, n. *dī′sėr-ăs* [Gr. *di*, twice, twofold; *keras*, a horn]: genus of massive bivalves of the Middle Oolites, belonging to the family *Chamidæ* or clam-shells. The shell is sub-equivalve, attached by either ambo.

DICH, v. *dĭsh:* a word in Shakespeare, in 'Timon of Athens,' not understood, but commonly said to be a corruption of 'do it': may it not be simply the *OE.* and *Scot.* word *dish* or *dusch*, 'to rush into forcibly,' 'to twang'? in which case, the line is thoroughly expressive of the pleasurable excitement that follows good eating and drinking.

DICHASIUM, n. *dī-kā'zĭ-ŭm* [Gr. *dichāzō*, I divide into two]: in *bot.*, a form of definite inflorescence in which each primary axis produces a pair of opposite lateral axes, each of which produces a similar pair; a dichotomous cyme.

DICHASTASIS, n. *dĭ-kăs'tă-sĭs* [Gr. *dichazō*, I part asunder—from *dicha*, in two parts, apart]: spontaneous subdivision. DICHAS'TIC, a. *-tĭk*, capable of spontaneous subdivision.

DICHELESTIDÆ, n. plu. *dī-kĕ-lĕs'tĭ-dē* [Gr. *dichē*, in two ways: *lēstēs*, a robber (?)]: family of entomostracans, order *Parasita*. The anterior segment has four antennæ, one pair of which is filiform, the others stout and furnished with a prehensile claw. DICHELES'TIUM, *-ŭm*, typical genus of the family *Dichelestidæ*. The species are parasitic upon fishes, etc.

DICHLAMYDEOUS, a. *dĭk'lă-mĭd'ĭ-ŭs* [Gr. *dis*, twice; *chlamus*, a garment]: having two coverings; in *bot.*, applied to those flowers which have both a calyx and a corolla. Flowers in which the calyx and corolla are very similar, and unite to form a *perianth*, are dichlamydeous, as well as those in which they are very different. Decandolle divides dicotyledonous or exogenous plants in to *Dichlamydeous* and *Monochlamydeous;* the former including the three sub-classes of *Thalamifloræ*, *Calycifloræ*, and *Corollifloræ*, while the latter form a single sub-class.

DICHOBUNE, n. *dī-ko-būn'* [Gr. *dicha*, in two parts, apart; *bounos*, a ridge: so called from the ridges in the upper molars]: genus of the family *Anoplotheridæ*, and found in the middle Eocene formations. They constitute a kind of transition between the Swine and the true Ruminants.

DICHOGAMOUS, a. *dī-kŏg'ă-mŭs* [Gr. *dicha*, in two parts; *gamĕō*, I marry]: applied to plants in which the stamens and stigmas of the same flower do not reach maturity at the same time. DICHOG'AMY, n. *-ă-mĭ*, the ripening of the stamens and pistil of a flower at different times.

DICHONDRA, n. *dī-kŏn'dra* [Gr. *di*, *dis*, twice, twofold; *chondros*, corn—in allusion to the capsules]: genus of *Convolvulaceæ*, tribe *Dichondreæ*, of which it is the type. DICHON'DREÆ, n. plu. *-drē-ē*, tribe of *Convolvulaceæ*, characterized by having the carpels distinct instead of consolidated.

DICHOTOMOUS, a. *dī-kŏt'ŏ-mŭs* [Gr. *dichotŏmos*, divided into halves—from *dicha*, in two parts; *tomē*, a cutting]. having the divisions always in pairs; in *botany*, denoting branching by repeated forkings, as in the veins of the fronds of ferns and of the leaves of some coniferous trees, the stems of some ferns, the fronds of some algæ, etc.: the stem of the mistletoe is usually thus divided, and this division is a remarkable characteristic of the doom-palm stem. **Dichot'omist**, n. one who dichotomizes. Dichot'omize, v. *-mīz*, to cut or divide into two parts, or into pairs. Dichot'omi'zing, imp. Dichot'omized, pp. *-mīzd*. Dichot'omy, n. *-mĭ*, division or distribution by pairs: in anthropology, theory of man as existing in a twofold nature, body and soul—opposed to trichotomy (threefold—body, soul, and spirit): see Soul.

DICHROISM, n. *dĭk'rō-ĭzm* [Gr. *dis*, twice; *chrŏă*, color]: in *crystallography*, the property which many doubly-refracting crystals possess of exhibiting two or more colors, when viewed in different directions. It, or the allied term *Dichromatism*, has been applied also to those fluids which appear of different colors when viewed by reflected and refracted light; when seen in thick or thin layers, etc.: e.g., venous blood, or any blood impregnated with carbonic acid, hydrogen, or nitrogen, appears, when in moderately thin layers, of a purple color; in extremely thin layers, green. Dich'roite, n. *-īt*, another name for the crystal *iolite*, a silicate of magnesia, iron, and alumina; so called from its exhibition of different colors when viewed in different directions. Dich'romat'ic, a. *-măt'ĭk*, exhibiting two or more colors. Dichro'matism, allied term to Dichroism.

DICHROSCOPE, n. *dī'kro skōp* [Gr. *dichroia*, double color; *skopeō*, I see]: instrument to exhibit the two complementary colors of polarized light.

DICK, *dĭk*, Thomas, ll.d.: 1774–1857, July 29; b. near Dundee, Scotland: religious philosopher. He was educated at the Univ. of Edinburgh, and intended for the ministry of the Secession Presb. Church. After a brief pastoral charge, he applied himself to teaching, lecturing, occasional preaching, and authorship. D. as an author was very popular; but though his works had wide circulation in England and the United States, they brought him very little pecuniary return. Toward the close of his life, a small pension was granted him. He died at Broughtoy Ferry, near Dundee. D's principal works are —*The Christian Philosopher* (1823), *The Philosophy of Religion* (1825), *The Philosophy of a Future State* (1828), *Celestial Scenery* (1838), *The Sidereal Heavens* (1840), and *The Practical Astronomer* (1845). Several of D.'s writings have been translated into other languages; one, even into Chinese. Their scientific views are now outgrown.

DICK BEQUEST': fund bequeathed by James Dick of Finsbury Square, London, for the benefit of the parochial schoolmasters of Moray, Banff, and Aberdeen. James Dick (1743, Nov.—1828, May 24; b. Forres, Morayshire) entered mercantile life in the W. Indies at the age of 19, amassing wealth, which he subsequently increased in London; leaving most of it for the purpose above mentioned. The amount (1833) was £113,147, 4s. 7d., since increased to £122,000; yielding (after deducting all expenses) for annual distribution a sum which averages £4,000. Mr. Dick's object was 'to encourage active schoolmasters, and gradually to elevate the literary character of the parochial schoolmasters and schools.' The operation of this bequest has been most advantageous. There is no district in Scotland in which the parochial schools are so uniformly taught by highly qualified men, and with results so beneficial.

DICKENS, n. *dĭk'nz:* an old vulgar slang exclamation, usually understood to be synonymous with 'devil'; as, 'What the *dickens* are you about?' may the word not rather be the *OE.* and *Scot.* word *dichens*, 'a beating, severe retribution'? thus connecting the exclamation with the retribution expected to follow carelessness or wrong-doing.

DICKENS, *dĭk'ĕns*, CHARLES: novelist and humorist: 1812, Feb.—1870, June 9; b. Landport, in Hampshire, England; son of John D. His father was employed some years in the navy pay dept., but at the conclusion of the war with France was pensioned, and became a parliamentary reporter. In this pursuit his son was soon distinguished for uncommon ability; and after a literary engagement—at a very early age—upon *The True Sun*, he attached himself to the staff of the *Morning Chronicle*. In this newspaper he gave the first evidence of his talents in the lively essays, entitled *Sketches by Boz*, 1836. Encouraged by their success, he undertook to write the letterpress of the *Adventures of Mr. Pickwick*, the illustrations of which were to be executed by the then more famous Mr. Seymour, comic draughtsman, The result was as though Shakspeare had been engaged to write the libretto for an opera of Balfe. The *Pickwick Papers*, which had enormous commercial success, made an era in English literature. It was the first of a series of fictitious works exhibiting the life and manners of the middle and lower classes, which had had scarcely any exponent. In one respect; however, this book had neither predecessor nor progeny. Neither before or since has there ever been such a literary embodiment of healthy animal spirits. There is none like it for unflagging merriment—for humor very much the reverse of dry. That D. gave us no more *Pickwick Papers* is to be lamented, but may be easily explained by the fact, that he never had the advantage of being five-and-twenty again. Since then, however, he has produced many works more admirable in other respects. *Nicholas Nichleby*, his next effort, was, as a story, greatly in advance of Pickwick. It was also the first of those social novels which form so marked a feature in modern literature. It was aimed at the wrongs and cruelties inflicted upon their wretched pupils by the cheap school-masters of Yorkshire—and it hit its mark. After this beginning, D. set lance in rest against many a social monster. He may be sometimes wrong, but he can scarcely be accused of want of honesty of purpose; while quite as little can partisanship (except that he is always for the poor) be laid to his charge, since at the very time that the country gentlemen were shaking their heads at him for his want of reverence for 'land,' he incensed the manufacturing interest by the publication of *Hard Times*. His sarcasm is peculiar; too good-natured to sneer, and with eyes, notwithstanding their indignant fire, that never lose sight of the ludicrous side of things, his style is mocking argument. After *Nicholas Nickleby* came *Master Humphrey's Clock,* containing the *Old Curiosity Shop* and *Barnaby Rudge.* In the former of these, and in the character of Little Nelly, he first showed that power of setting forth child-life and child-thought which, before the publication of George Eliot's works, was perhaps peculiarly his own. *Barnaby Rudge* was his first, and, with the exception of his subsequent *Tale of Two Cities,* his only attempt to describe the the past; and it was successful. It is probably, with reference to plot and circumstance, his best novel, excepting *David Copperfield.* The *Old Curiosity Shop* began in a curious dreamy manner, which, though obviously favorite with the author, was soon perceived by him to be unappreciated, and was therefore prudently discontinued. This disposition of his mind toward the weird and the grotesque he subsequently developed with greater success in his *Christmas Stories.* After a voyage across the Atlantic, D. published, 1842, his *American Notes for General Circulation,* largely but not thankfully read in the United States; but a much more admirable result of that expedition appeared in his *Martin Chuzzewit,* certainly the greatest of his humorous works since the *Pickwick Papers,* and almost his last. From this period, his animal spirits—a rare gift among even comic authors, and rarely lasting so long as in his own case—appeared to have deserted him His humor, except in some rich creations, such as Mr. Micawber, was no longer so apparent, while, on the other hand, his wit and pathos increased. *Dombey and Son* was considered a falling off in one who stood so high; yet his death of little Dombey brought tears to the eyes of lawyers. When men were expecting that he would wane and weaken like other prolific writers before him, he produced a novel as fresh as the dawn. In this, he, for the first time, adopted the autobiographical form, and that may have brought him some advantages; but at all events, the result was admirable. *David Copperfield* is generally considered by far his greatest work, and will endure—though for very differerent reasons—as long as the *Pickwick Papers.* Its Agnes is one of the most charming female characters in the whole range of fiction. *Bleak House, Hard Times, Little Dorrit, The Tale of Two Cities, Great Expectations,* and *Our Mutual Friend,* succeeded with almost periodical punctuality, and an audience larger than any English author ever had awaited each. *Oliver Twist* also was one of his most popular works; its first instalment appeared 1837, in *Bentley's Miscellany.* No prose-writer was ever more quotable or more quoted than he. In 1843, the *Daily News* was started under his editorial auspices, but the task appears to have been ungenial, for he soon withdrew from it. In 1850, he commenced a weekly periodical entitled *Household Words,* afterward merged in *All the Year Round.* In 1867, again he visited America, giving numerous readings, and meeting a brilliant reception. He was till the last, engaged in writing a new novel, *The Mystery of Edwin Drood,* which was left unfinished.

See his *Life*, by Forster (3 vols. 1871–74); and a selection of his *Letters* (1879–81).

DICKER, n. *dĭk'ėr* [Gr. *deka*, ten: Icel. *dekur*: Gael. *deich*, ten]: the number or quantity of ten, applied to such articles as skins or hides.

DICKEY, or **Dicky**, n. *dĭk'ĭ* [Dut. *dekken*, to cover, to protect: Ger. *decke*, a cover]: a seat behind or before in a coach; a shirt-front. *Note.*—Dick and Dicky are *OE.* words denoting 'a leather apron and bib, a leather apron': these words, however, may only be diminutives of the proper name *Dick*, such familiar applications of names of persons to tools and contrivances being quite common, as jack, jemmy, jenny, etc.

DICKINS, John: 1747, Aug. 24—1798, Sep. 27; b. London: Meth. Episc. minister. He was educated at Eton; removed to the United States; united with the Meth. Episc. Church in Va. 1774; preached as an evangelist till 1777, when he was received into the itinerant ministry; suggested the plan of Cokesbury College, Md., the first academic institution of his denomination in the country, 1780; preached in New York 1783–85, 1786–89; and, removing to Philadelphia 1789, published a Meth. hymn-book, and, being appointed by the conference book-steward, founded the Meth. Book Concern. He was a member of the 'Christmas Conference' 1784, and published the *Methodist Magazine* from 1797 till death. After laboring heroically through the yellow fever epidemics of 1793 and '97 died in that of 1798.

DICKINSON, *dĭk'ĭn-son*, **Anna Elizabeth**: b. Philadelphia, 1842, Oct. 28: lecturer. She received a Quaker school education, began writing anti-slavery articles for the newspapers when 14 years old, and made her first appearance as a public speaker when 15. In 1859–60, she taught school in Berks co., Penn., and for a part of 1861 was employed in the Philadelphia mint, subsequently making lecturing her profession. In the early part of this career, she confined herself to the slavery and other political subjects of the day; through the civil war she spoke and labored with great zeal in support of the union cause and the republican party, treating war issues particularly; and from the close of the war till 1876 she delivered lyceum addresses on *Reconstruction*, *Woman's Work and Wages*, *Whited Sepulchres*, *Demagogues*, and *Workingmen*, *Joan of Arc*, and *Between us be Truth*. In 1876, she went from the lecture platform to the stage, and made her debut as an actress at the Globe Theatre, Boston, in her own drama *A Crown of Thorns*, May 8. She was not successful in this and several subsequent engagements, and on retiring from the stage charged her failure to the animosity of the critics. In 1888, Sep., she resumed lecturing in behalf of the republican party. She published *What Answer?* (1868), *A Paying Investment* (1876), and *A Ragged Register of People, Places, and Opinions* (1879).

DICKINSON, John, LL.D.: 1732, Nov. 13—1808, Feb. 14; b. Md.: statesman. He studied law in Philadelphia and London, began practicing in Philadelphia, became a member of the Penn. assembly 1764, of the first colonial congress 1765, and of the first continental congress 1774. In the latter body he was an accomplished debater, and author of several important state papers opposing the American policy of the British govt. He regarded the Declaration of Independence as a premature act, absented himself from the hall when the vote on its adoption was taken, and with a few other members of congress declined to sign it when adopted. For this he was defeated at the next election, when he entered the army as a private and rose to the rank of brig.gen. In 1779, he was elected to congress from Del.; 1780, became a member of the Del. assembly, and 1781, pres. of the state; 1782–85 was pres. of Penn.; 1783, founded and liberally endowed D. College, Carlisle, Penn.; and 1787, was a member of the convention that framed the federal constitution. He received his degree from the College of N. J., 1796.

DICKINSON, Jonathan: 1688, Apr. 22—1747, Oct. 17; b. Hatfield, Mass.: Presb. minister. He graduated at Yale in his 19th year; and, after studying theology, became pastor of the First Presb. Church, Elizabethtown, N. J., about 1709. As a preacher he was faithful, popular, and diligent, having a parish containing five or six congregations in as many townships In the church at large he was eminent. Calvinistic in doctrine, and accepting the Westminster Confession, he strenuously denied the right, which has been so frequently claimed, of binding the conscience by rigid subscription to uninspired creeds. As a theological writer he ranked among the best of his day. He was a zealous advocate of missionary work, and a cordial friend to David Brainerd in his efforts among the Indian tribes. In 1746, he became one of the founders of the College of New Jersey, of which he was elected president, and which on his account was commenced at Elizabethtown. His new career of usefulness was soon cut short by his death. His name lives at Princeton in Dickinson Hall, one of the edifices erected by private munificence during the presidency of Dr. McCosh.

DICKINSON COLLEGE: at Carlisle, Penn.; founded 1783 through the liberality and interest of John Dickinson, deputy in the first colonial congress, and named after him. It was originally established as a Presb. institution, and remained such till the denominational division 1833, when it was placed under the control of the Meth. Episc. Church, which has since maintained it. Under its new auspices a new building was erected, the grounds were improved, all the departments were thoroughly reorganized, with a faithful regard to the chief condition of the transfer that its literary character should be maintained at the highest grade; and efforts were begun for a fitting endowment. In 1851, a plan of endowment was put into operation, by which scholarships providing four years' tuition were sold for $25 each, and both the funds and number of students were greatly increased by it. During the centennial year of American Methodism (1866) over $100,000 were appropriated to its endowment fund, and with this increase in resource its course of study was enlarged by the addition of elective, scientific, and biblical studies in the junior and senior years. Its buildings are ample, comprising three colleges and a scientific building, recently erected, containing the chemical and physical laboratories, a new library hall, and a new gymnasium. The combined libraries of the college and literary societies contain about 30,000 vols., including many rare and otherwise valuable books. There were 10 instructors and 93 students in the college year 1887. The Rev. Dr. J. A. McCauley was elected pres. 1872, and resigned 1888, when the Rev. Dr. C. F. Hines, senior prof., became acting pres. While a Presb. institution its presidents were: Charles Nisbet (elected 1784), Robert Davidson (1804), Jeremiah Atwater (1809), John M. Mason (1821), William Neill (1824), and Samuel M. How (1830); and under the Meth. Episc. Church: John P. Durbin (1833), Robert Emory (1845), Jesse T. Peck (1848), Charles Collins (1852), Herman M. Johnson (1860), Robert L. Dashiell (1868), James A. McCauley (1872), and C. F. Hines, acting (1888).

DICKSONIA, n. *dĭk-sō'nĭ-a* [named after James *Dickson,* an eminent cryptogamic botanist]: genus of *Polypodiaceæ,* the type of the section *Dicksonieæ.* The species are mostly arborescent ferns from the s. hemisphere. The tree-fern of St. Helena is *D. arborescens.* *D. Antarctica* is very beautiful, and is often seen in greenhouses.

DICLESIUM, n. *dī-klē'zĭ-ŭm* [Gr. *diklis,* folding two ways]: a small, dry, indehiscent pericarp, having the indurated perianth adherent to the carpel, and forming part of the shell, as in Marvel of Peru.

DICLINOUS, a. *dĭ-klī'nŭs* [Gr. *dis,* twice; *klīnē,* a couch]: in *bot.,* having the male and female organs in separate flowers, each having stamens only, or pistils only; unisexual, opposed to *monoclinous* or *hermaphrodite.*

DICLIPTERA, n. *dī-klĭp'tėr-a* [Gr. *di, dis,* twice, twofold; *kleiō,* I shut; *pteron,* a wing: so named because the fruit is two-valved]: genus of *Acanthaceæ,* tribe *Diclipteræ,* of which it is the type. The sepals are five, the corolla two-lipped, its tube twisted, the stamens two. About 70 species are known from the tropics of both hemispheres. DICLIPTER'IDÆ, n. plu. *-tĕr'ĭ-dē,* family or tribe of *Acanthaceæ.*

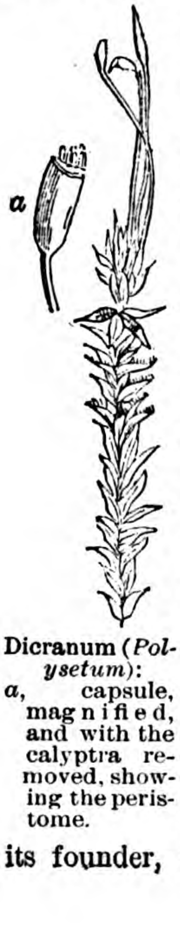
DICOCCOUS, a. *dĭ-kŏk'kŭs* [Gr. *dis,* twice, double; *kokkos,* a berry, a kernel]: in *bot.,* having two capsules united, one cell in each; split into two cocci.

DICŒLOUS, a. *dĭ-sē'lŭs* [Gr. *di, dis,* twice, twofold; *koilos,* hollow]: having two cavities: used chiefly of the heart in animals.

DICOTYLEDONOUS, a. *dī'kŏt-ĭ-lē'dŏ-nŭs* [Gr. *dis,* twice, and Eng. *cotyledonous*]: having the embryo ordinarily furnished with two seed-lobes or cotyledons (q.v.) opposite to one another, or with or more than two, which in that case are verticillate. DI'COTYLE'DON, n. *-lē'dŏn,* a plant whose seeds consist of two lobes. In general there are only two cotyledons; a greater number being rare, but found in some of the *Coniferæ*, as spruch, fir, larch, etc., in *Ceratophyllum*, etc. It is not always easy to determine whether a plant belongs to the class of Dicotyledonous Plants or to that of Monocotyledonous Plants (q.v.), as sometimes, in the former, only a single cotyledon presents itself, e.g., in a number of species of the sub-genus *Bulbocapnos* in the genus *Corydalis;* or the cotyledons are altogether wanting, e.g., in Dodder (*Cuscuta*); or the embryo is so rudimentary in the seed, that it at first consists only of a pair of cells, e g., in *Monotropa*. The habit of the plants is therefore also to be taken into account, particularly the structure of the stem and its mode of increase, The *radicle* of the embryo in dicotyledonous plants generally elongates itself by degrees until it forms the root of the plant itself; wherefore Richard designated these plants *Exorhizæ* (Gr. *exo,* outward, and *rhiza,* a root). The stem is exogenous (q.v.), and usually branched. The leaves have branching veins, and great variety of form. They are articulated to the stem. The calyx and corolla, when both present, are usually more distinct and dissimilar than in monocotyledonous plants.

DICOT'YLES: see Peccary.

DICRANACEÆ, n. plu. *dī-krăn-ā'sē-ē* [mod. L. *dicranum;* L. suf. *-aceæ*]: family of apocarpous operculate mosses, branching by innovations, or with the tops of the fertile branches several times divided.



Dicranum (*Polysetum*): *a*, capsule, magnified, and with the calyptra removed, showing the peristome.

DICRANOCERUS, n. *dī-krăn-ŏs'ėr-ŭs* [Gr. *dikranos,* two-headed, forked; *keras,* a horn]: genus of quadrupeds belonging to the antelope family, in which the horns are greatly compressed, rough, with an anterior process; tail very short, facial line convex; structure cervine.

DICRANUM, *dī-krā'nŭm:* genus of mosses, having a single *peristome* of 16 equidistant bifid teeth and the *calyptra* splitting up on one side (*dimidiate*). See Mosses. The species are numerous, and some are very common, growing on the ground and on moist rocks. Many have elongated branching stems.

DICROTIC, a. *dī-krŏt'ĭk* [Gr. *di, dis,* twice, twofold; *kroteō,* I make to rattle, I knock, I strike: *krotos,* a striking or rattling together]: an epithet applied to the pulse, when the artery, when felt, conveys the sensation of a double pulsation. Di'crotism, n. *-izm,* the double beating of the pulse. Dicrotous, a. *dī'krŏt-us* [Gr. *dikrotos*]: beating twice as fast as usual (applied to the pulse).

DICRURIDÆ, n. plu. *dī-krôr'ĭ-dē* [*dikroos,* forked; *oura,* a tail]: family of dentirostral birds, order *Passeres,* which by its founder, G. R. Gray, was classed with the family

Ampelidæ. The *Dicruridæ* (king-crows or drongo-shrikes) resemble the flycatchers (*Muscicapidæ*), to which they are allied, especially in having the nostrils entirely hidden by bristles. They have, however, only ten tail-feathers. The feet are essentially constructed for grasping, which, with the lengthened tail, renders walking difficult. All the species feed on insects, which they capture on the wing, returning again immediately to the perch they have just quitted or some adjoining place of rest. The members of this family range through the Ethiopian and Indian regions and the Austro-Papuan, including the Moluccas. DICRURI'NÆ, n. *-rī'nē,* sub-family of *Dicruridæ.* DICRURUS, n. *dī-krō'rus,* or DICROURUS, *dī-krow'rŭs,* genus of birds, typical of the sub-family *Dicrurinæ.* There are several species, among which may be named the *D. macrocerus,* the King of the Crows, of Bengal, and *D. musicans,* whose notes have been compared to those of the thrush and nightingale.

DICTAMEN, n. *dĭk-tā'mĕn* [L.L.—from *dicto,* I dictate: F. *dictamen,* inward consciousness]: a dictate; a precept; an injunction.

DICTAMNEÆ, n. plu. *dĭk-tăm'nē-ē* [L. *dictamnus;* suf. *-eæ*]: tribe of *Rutaceæ.* DICTAMNUS: see DITTANY.

DICTATE, v. *dĭk'tāt* [L. *dictātus,* said often, dictated—from *dictārĕ,* to say often, to assert repeatedly—from *dicĕrĕ,* to say: F. *dicter*]: to tell or order with authority; to utter words that are to be committed to writing by another; to suggest; to direct: N. an order delivered; a rule or maxim; a suggestion to the mind, as a rule or direction. DIC'TATING, imp. DIC'TATED, pp. DICTA'TOR, n. *-tā'tėr,* one invested for a time with absolute power. DICTA'TRESS, or DICTA'TRIX, n. fem. *-trĭks,* a woman who. DICTA'TION, n. *-shŭn,* the act of uttering words to be written by another; the speaking to, or the giving orders to, in an overbearing manner. DICTA'TORSHIP, n. the office of a dictator. DIC'TATO'RIAL, a. *-tă-tō'rĭ-ăl* [F.—L.]: absolute; unlimited; imperious; overbearing; dogmatical. DIC'TATO'RIALLY, ad. *lĭ.*—SYN. of 'dictate, v.': to prescribe; urge; communicate; admonish; point out;—of 'dictate, n.': suggestion; injunction; command; impulse; admonition; prescription, direction.

DICTA'TOR: in earliest times, the highest magistrate of the Latin Confederation, and in some of the Latin towns the title was continued long after these towns were subjected to the dominion of Rome. In the Roman Republic, the D. was an extraordinary magistrate, irresponsible and endowed with absolute authority, whose original name was *magister populi.* The frequency of *crises,* or critical periods, in the quick, aggressive growth of the Roman state, was the occasion for such an office. The first D. (T. Larcius or M. Valerius) was appointed B.C. 501, nine years after the expulsion of the Tarquins. According to Livy, the immediate cause of this dictatorship was a formidable war with the Latins. In general no one could be appointed D. who had not been previously consul, and this condition was very rarely dispensed with. Niebuhr is of opinion that the D. was originally created or elected by the curiæ, like the kings, but it is more probable that the senate passed a decree ordering one of the consuls to name or proclaim (*dicere*) a dictator. Originally, of course, the D. was a patrician; the first plebian who filled the office being C. Marcius Rutilus, B.C. 356, nominated by the plebian consul M. Popillius Lænas. The dictatorship could not *lawfully* be held longer than six months, nor was it ever so, except in the cases of Sulla and Cæsar, which were altogether peculiar. It must not be supposed that during a dictatorship the functions of the other magistrates were positively suspended. The consuls and other regular authorities continued to discharge their proper duties, but in subordination to the direction and command of the D.; being for the time simply his officers. The superiority of his power, when compared with that of the consuls, appears chiefly in these three points: he was far more independent of the senate; he had a more extensive power of punishment, without any appeal; and he could not be called to account after his abdication of the dictatorship for anything that he had done during the period of his office. The *limits* of his power were as follows: he could not touch the treasury; he could not leave Italy; and he could not ride through Rome on horseback without previously obtaining the permission of the people. While the consuls had only 12 lictors, the dictator was preceded by 24, bearing the *secures* and *fasces*. To him belonged also the *sella curulis* and the *toga prætexta*. The last legally elected D. was M. Junius Pera, who entered on his office B.C. 216. From this time *nominal* dictators were frequently appointed for the purpose of holding the elections, but even these finally disappeared, B.C. 202. Thenceforth, in critical times, a sort of dictatorial power was conferred on the consuls by the senate by the well-known formula: 'That the consuls should see to it, that the state should receive no damage.' This rendered the appointment of *dictators* no longer necessary.

DICTION, n. *dĭk'shŭn* [F. *diction*, diction, speech—from L. *dictĭōnem*, a saying, speech, style—from *dictus*, said (see DICTATE)]: style or manner of expressing ideas in words. DIC'TIONARY, n. *-ĕr-ĭ*, a book containing the words of a language, arranged in alphabetical order, with their meanings; a lexicon: ADJ. as found or given in a dictionary. DIC'TUM, n. *-tŭm* [L. a saying]: a positive or authoritative statement; a dogmatic saying. DIC'TA, n. plu. *-tă*, dogmatic sayings.—SYN. of 'diction': phraseology; style;—of 'dictionary': glossary; lexicon; vocabulary; encyclopedia; word-book.

DIC'TIONARY [merely the English form of *dictionarium*, a word not found in classical Latin, though frequent in monkish or mediæval Latin]: word-book; vocabulary; book, showing the words (or a certain class of words) of a language in alphabetical order, with their meanings; differing from a mere list or index, by giving explanations or information about each word included within its scope. Several other terms are used synonymously, or nearly so, with dictionary. The Greek word Lexicon is in common use for a dictionary of any dead language; but is not strictly so limited in practice, as may be seen in such works as the *Lexicon Juridicum* of Calvinus or Kahl, which is a dictionary of Roman and feudal law, of the same kind as Sir Edward Tomlin's *Law Dictionary* of English law: the word lexicon is applied sometimes also to a D. of a living language. The word encyclopedia has generally a wider meaning; but there are often several books exactly of the same kind, of which some are called dictionaries, and others encyclopedias. Glossary and Vocabulary are nearly synonymous with a dictionary of a language; and the words Thesaurus, Catalogue, Directory, Gazetteer, and Index, are sometimes used as a title when dictionary might be not inapplicable.

Dictionaries may be divided into two classes—(1) those whose object is to explain words and phrases; (2) those whose object is to give information about things, including also persons and events.

1. Dictionaries of languages are divided into various subclasses or species. The most common kind—what, indeed, is understood by the term dictionary (and the equivalent Greek term *Lexicon*) when used by itself—is an alphabetical list of the words composing any language, either explained in the same language, or interpreted by the corresponding words of one or more other languages. To indicate that all, or nearly all, the words of the language are embraced, the name *Thesaurus* (Treasury) is sometimes used. *Special* dictionaries contain only the words used by single authors, or classes of authors. A *Glossary* is a dictionary of unusual terms. An *Etymological* dictionary is one in which the derivation of words is the sole or a prominent object.

2. Dictionaries of things (Ger. *Realwörterbücher*), or of information, are of various kinds. When the whole field of human knowledge is embraced, it is an alphabetical encyclopedia, or cyclopedia, which name is given sometimes to dictionaries of special departments of knowledge, as the *Cyclopedia of Anatomy and Physiology;* but in all such cases, dictionary seems the more correct term. See ENCYCLOPEDIA.

There is no kind of information, within wide or narrow bounds, that may not be thrown into the dictionary form. Dictionaries of apt quotations from the classics, the Scriptures, or the fathers, were much in vogue in the 17th c. There are dictionaries of biography, of geography, of dates, of architecture, of cookery, of political economy, of fortifications—in fact, of every object of human knowledge and practice.

Dictionaries of language, in the present sense of the word, are of modern origin. The Greeks and Romans had no idea of a book embracing all the words of their own or any foreign tongue. Glossaries, however, of unusual words and phrases were early current. The earliest work of the kind extant (though much interpolated) is the Homeric Lexicon (Gr. *Lexeis Homerikai*, 'Homeric words') of Apollonius, Alexandrine grammarian of the time of Augustus. More extensive compilations, such as the Lexicon of Suidas (q.v.), and the *Etymologicum Magnum* (q.v.), were made in the middle ages. A real dictionary first became possible after the invention of printing. A broad and sure basis for Greek lexicography was laid by Henry Stephens (q.v.) in his *Thesaurus* (1572). The well-known work of Liddell and Scott (7th ed. 1883), is based on the great German one of Passow. The *Thesaurus* of Robert Stephens inaugurated Latin lexicography: see also FORCELLINI. The earliest standard dictionaries of modern tongues were the Italian *Vocabulario della Crusca*, 1612; the Dictionary of the French Acad., 1694; and that of the Acad. at Madrid, 1726–39. Among recent standard dictionaries, the most important are the great German Dictionary, begun 1852 by the brothers Grimm, and still unfinished; Littré's French Dictionary; and the *New English Dictionary* of the Philological Soc., begun in 1857, and the first vol. of which appeared, under the editorship of Dr. James A. H. Murray, 1884; of this immense work, known as the Oxford English Dictionary, Part IV., completing Vol. II., and extending to 'CASS,' appeared 1888, July. It aims to furnish 'an adequate account of the meaning, origin, and history, of English words now in general use, or known to have been in use at any time during the last 700 years.' The best complete English dictionaries at present in use are, (American) Webster's, and Worcester's; (British) Richardson's, and Latham's edition of Johnson's D.; and for etymology, that of Prof. Skeat. Cassell's D. is extensive; Stormonth's, not so full, is popular and serviceable. For older English words, the chief are Ælfric's Glossary (about 975), the *Promptorium Parvulorum* (about 1440), Bosworth's *Anglo-Saxon Dictionary*, Stratmann's *Dictionary of the Old English Language*, Grein's *Sprachschatz der Angelsächsischen Dichter*, and Mätzner's *Altenglische Sprachproben, nebst einem Wörterbuche*.

DICTYDIUM, n. *dĭk-tĭd′ĭ-ŭm* [Gr. *diktudion*, dim. of *diktuon*, a net]: genus of *Myxogastres* (gasteromycetous fungi). They are exceedingly elegant little plants, growing upon rotten wood. When the spores are expelled the transparent case appears like a cage, formed of the veins alone.

DICTYOGENS, n. plu. *dĭk′tĭ-ō-jĕns* [Gr. *diktŭŏn*, a net; *gennăō*, I produce]: in *botany*, class of plants, established by Lindley for the reception of a comparatively small number of nat. orders, genera, and species, usually included by other botanists among *Endogens* or ENDOGENOUS PLANTS (q.v.), but which, while they agree with endogens in the structure of the embryo, differ from them in the stem and leaves. They seem, in some sense, intermediate; as the annual branches or aërial stems have indeed the endogenous structure, but the rhizomes or subterranean stems more resemble the structure exogenous plants (q.v.), with pith, medullary rays, and wedge-like vascular bundles. The leaves are broad and net veined, usually disarticulating with the stem

The most important nat. orders referred by Lindley to this class are *Dioscoreaceæ* and *Smilaceæ*, and the most important plants belonging to it are the different species of Yam and Sarsaparilla.

DICTYOPTERIS, n. *dĭk'tĭ-ŏp'tėr-ĭs* [Gr. *diktŭŏn*, a net; *pteris*, a fern]: in *geol.*, a genus of carboniferous ferns. **DIC'TYOPHYL'LUM**, n. *-ŏ-fĭl'lŭm* [Gr. *phullon*, a leaf]: a general name applied to all unknown fossil dicotyledonous leaves having a net-like structure.

DICTYOTA, n. *dĭk-tĭ-ō'ta* [Gr. *diktuōtos*, reticulated, net-like]: genus of algæ, typical of the family *Dictyōtidæ*. **DICTYO'TEÆ**, n. plu. *-tē-ē*, order of algæ, with dark seeds, superficial spores, or cysts, arranged in spots or lines, fronds flat or thread-like **DICTYO'TIDÆ**, n. plu. *-tĭ-dē*, family of algæ, order *Fucaceæ*, tribe *Halysereæ*.

DICTYS, *dĭk'tĭs*, OF CRETE: historian and alleged author of a history of the Trojan war. The early belief was that he accompanied Idomeneus, King of Crete, to the siege of Troy, wrote a detailed history of the war, and at his death ordered it to be buried in his tomb, where it remained till a violent earthquake in the reign of Nero opened the tomb and disclosed the history to some shepherds, who took it to Rome. A Latin translation in five books, now extant, is said by some authorities to have been composed in the 15th c., and by others in the age of Constantine, and falsely attributed to D. It was earnestly contended by many ancient writers that Homer was indebted to this work for the idea and information that led him to compose the great epics, the *Iliad* and the *Odyssey*. A 4to ed. of D. was published by Masellus, Mediol, 1477.

DICYNODON, n. *dī-sĭn'ō-dŏn*, **DICYNODONTIA**, n. plu. *dĭs'ĭn-ō-dŏn'shĭ ă* [Gr. *dis*, twice; *kŭŏn*, a dog; *odonta*, a tooth —*lit* , two-dog-teeth]: name given by Owen to a genus of very peculiar fossil reptiles, whose remains have been found in s. Africa and Bengal. The true age of the rock in which they occur has not been ascertained; the accompanying organisms indicate that it is Triassic. Few bones of these animals, save those of the skull, have been sent to Europe. A complete restoration of one would be a most valuable addition, not only to paleontology, but to systematic zoology as well; for the numerous skulls that have been examined, have been sufficient to show that this is one of those anomalus forms which unite in their structure the characteristics of widely different animals. It has affinities with the crocodile, the lizard, and the tortoise, though perhaps the completely closed orbits and the sharp compressed jaws ally it more closely to the tortoise. Its lower jaw also is covered with a horny plate, as in the tortoise. The most remarkable peculiarity is the existence of a pair of large sharp pointed tusks, one from each side of the upper jaw, growing downward as in the mammalian morse or walrus. The generic name, meaning 'two canine teeth,' has been given to them from these singular tusks, peculiar to this genus. The articulating surfaces of the vertebræ are both hollow—a fish-like peculiarity, from which it might be argued that these reptiles were good swimmers; probably they lived constantly in the water, but the construction of the bony passages of the nostrils proves that they must have come to the surface to breathe air. Four species have been discovered.

DICYPELLIUM, n. *dī-sĭ-pĕl'lĭ-ŭm* [Gr. *di*, *dis*, twice, and dim. of *kupellon*, a goblet, a cup]: genus of *Lauraceæ*. The bark of *Caryophyllatum* is the clove cassia of Brazil.

DICYSTIDEA, n. plu. *dī-sĭs-tĭd'ē-a* [Gr. *di*, *dis*, twofold; *kustis*, a bladder]: order of protozoa, akin to the *Gregarinida*.

DID, v. *dĭd:* past tense of Do, which see.

DIDACTIC, a. *dĭ-dăk'tĭk*, or DIDAC'TICAL, a. *-tĭ-kăl* [Gr. *didăktĭkos*, taught, apt to teach—from *didas'ko*, I teach]: adapted or intended to teach; preceptive; containing precepts or rules. DIDAC'TICALLY, ad. *-kăl-lĭ*. DIDACTICS, n. plu. *dĭ-dăk'tĭks*, the science of teaching; the precepts and rules of teaching; the best methods of systematic instruction. DIDACTIC POETRY, kind of poetry which aims, or seems to aim, at instruction, making pleasure entirely subservient to this. It has been disputed whether or not the existence of a kind of poetry especially entitled to the name didactic, consists with the nature and object of the poetic art. For it is held that, to point out instruction as the peculiar object of one kind of poetry, is to overlook the high aim of all poetry; and that a poem may be in the highest sense didactic, which yet is epic, dramatic, or lyric in its form; and the Book of Job, the Psalms, and other poems in the Sacred Scriptures, are cited as examples. In the poems generally called didactic, the information or instruction given in verse is accompanied with poetic reflections, illustrations, episodes, etc. The *Georgics* of Virgil have been the model according to which didactic poems have generally been composed. The subjects chosen are often most unpromising.

DIDACTYLOUS, a. *dī-dăk'tĭ-lŭs* [Gr. *dis*, twice; *daktŭlos*, a finger]: having two fingers or toes. DIDAC'TYL, a. *-tĭl*, having two toes: N. an animal having two toes.

DIDAPPER, n. *dī'dăp-pėr* [corrupted from *diver-dipper* = diver diver]: a natatorial water-bird—so named as constantly diving under water; the little grebe or dabchick.

DIDDER, v. *dĭd'dėr* [Ger. *zittern*, to tremble]: to shiver as with cold.

DIDDLE, v. *dĭd'l* [Gael. *didil*, great love or kindness: Icel. *dadra*, to wag the tail: Scot. *diddle*, to shake, to jog: frequentative of *do*]: to move as a child in walking; to totter; to cheat. DID'DLING, imp. DID'DLED, pp. *-ld*.

DIDECAHEDRAL, a. *dī-dĕk-a-hē'dral* [Gr. *dis*, twice; Eng. *decahedral*]: having the form of a decahedral prism, with pentahedral summits.

DIDELPHYS, or DIDELPHIS, n. plu. *dī-dĕl'fĭs* [Gr. *dis*, twice; *delphus*, a womb]: the opossum (see OPOSSUM). DIDEL'PHIDÆ, n. plu. *-fi dē*, the opossum family. DIDEL'PHIA: see under MAMMALIA. DIDELPHOID, a. *dī-dĕl'foyd* [Gr. *eidos*, appearance]: having two wombs; having the two horns of the uterus separate.

DIDEROT, *dē-dro'*, Denis: 1713, Oct. 5—1784, July 30; b. Langres, in Champagne: French encyclopedist and philosophical writer. He was educated for the priest-hood at the college of his native town, and subsequently at that of D'Harcourt, Paris; but disliking the clerical office, and after having made a trial of law, he finally became a *littérateur.* For some years his mode of life was very precarious. On one occasion, reduced to extremities, he seriously resolved that if he should ever prosper, he, not ignorant of misfortune, would never disregard the applications of the indigent. This resolution was religiously kept; for after having attained comparative affluence, he was continually surrounded by applicants desirous of obtaining assistance, which, whether in the shape of money or instruction, D. was always willing to give. In 1743, though very poor, D. married, and necessity drove him to increased exertions. He translated the *History of Greece* from the English of Stanyan, receiving 100 crowns. Soon afterward followed the *Essai sur le Mérite et la Vertu;* the *Pensées Philosophiques*, written, it is said, in the space of four days; and the *Interprétation de la Nature;* also *Lettre sur les Aveugles*, which caused his confinement for three months in the prison of Vincennes. Believing that it was, with other things, his vocation to regenerate the theatre, he produced a melodrama (1758), entitled *Le Père de Famille.* It was unsuccessful, and was followed by others equally so, so that it was said, 'Le Père de Famille a été le père d'une famille déplorable.'

But D.'s great work was the *Encyclopédie*, of which he and D'Alembert were joint-editors. It was commenced 1749. D., besides revising all the articles, wrote the departments of history, of ancient philosophy, and of the mechanical arts. He also wrote art criticisms, 1765–67, showing a readiness in interpreting the meaning of a picture, and a power in reproducing it vividly in words, unequalled by any writer of his time. Toward the last of his life, D., who had never saved any money, determined to sell his library, to provide for his only daughter. The empress Catherine of Russia, having been informed by her French ambassador of his intention, bought the library, on condition that D. himself should be librarian, and undertake the care of it at a salary of 1,000 francs yearly. In 1773, he set out for St. Petersburg to thank his imperial benefactress, returning in the following year. But his health, impaired by his journey, gave way, and he soon died.

D. had worked at the Encyclopedia for about thirty years. His fitness, natural and acquired, for this species of literary labor was complete. With the advantage of an excellent education, he had a great love of truth, and a curiosity to ascertain the real relations of any subject upon which he was engaged. He was distinguished by a swiftness and dexterity of intellect, that enabled him to catch the salient points of his topic, and to present them in the best light. As regards religion, D. was an atheist, sincere even to fanaticism in his opinions, and anxious to indoctrinate his countrymen with his own skepticism. The *Encyclopédie* became a vehicle for the indirect propagation of his views.

One of the last recorded sayings of D. is very characteristic: 'The first step toward philosophy is incredulity;' but unfortunately D. thought it was also the last. An edition, 20 vols., of all D.'s works, by Assézat and Tourneux, was completed 1877. See John Morley's monograph on *Diderot and the Encyclopædists* (2 vols. 1878).

DIDO, *dī'dō*, or ELISSA, *ē-lĭs'sa:* according to legend, the foundress of Carthage; daughter of a king of Tyre, called by some Agenor or Belus, by others Mutgo or Matgenus. His successor, Pygmalion, brother of D., murdered D.'s husband and uncle, a priest of Hercules named Acerbas; named by Virgil, Sichæus. With the treasures of Sichæus, which Pygmalion had sought for in vain, and accompanied by many Tyrians, D. escaped to sea. She landed in Africa, not far from the Phœnician colony of Utica, and built a citadel called Byrsa (from Gr. *Bursa*, the hide of a bull), on a piece of ground which she had bought from the Numidian king Hiarbas. The meaning of the word Byrsa, gave rise to the legend that D. purchased as much land as could be encompassed with a bullock's hide. After the agreement she cut the hide into thin thongs, and thus inclosed a large territory. Here she built the city of Carthage. To avoid being compelled to marry Hiarbas, she stabbed herself on a funeral pile, which she had caused to be erected, and after her death was honored as a deity by her subjects. Virgil ascribes the death of D. to her unrequited passion for Æneas; but many of the ancient writers conceived that the poet had committed an anachronism in making her contemporary with the Trojan prince. The more general opinion was, that D. built Carthage 50 to 100 years before the foundation of Rome.

DIDOT, *de-do'*, FRANÇOIS: 1689–1757: French printer and publisher, first of his family (afterward so noted) to attain eminence. His principal professional achievement was the publication of the *Voyages* of his friend the Abbé Prévost, 20 vols., perfect as regards the text, and enriched with a great number of engravings and geographical maps. D. had 11 children, of whom two—FRANÇOIS AMBROISE D. (1730–1804) and PIERRE FRANÇOIS D. (1732–95), gained distinction as printers.

DIDOT, HENRI: 1765–1855; eldest son of Pierre François D., made himself famous as engraver, type-founder, and mechanician, He was 66 years old when he engraved, for his well-known 'microscopic' editions of eminent authors, those characters which are the *ne plus ultra* of typographical art. A daughter of his brother, the third son of Pierre François D., married Bernardin de Saint-Pierre, who was for some time associated with the Didots in their paper manufactury of Essonne; and in his country-house near that place wrote *Paul et Virginie.*

DIDOT, PIERRE: 1760–1838; eldest son of François Ambroise D.: still further increased the fame of his family. His Louvre editions of *Virgile, Horace, Racine,* and *La Fontaine* are magnificent. At the Exhibition of the Products of Industry 1801, a jury declared his *Racine* to be *la plus parfaite production typographique de tous les âges.* Besides a great number of works, not less remarkable for typographical perfection than for literary value, such as the *Voyages de Denon*, D. published a collection of the French *chefs-d'œuvre*, dedicated *Aux amis de l'Art Typographique.* He was also an able *littérateur.*

Didot, Firmin: 1764–1836, Apr. 24; b. Paris; son of François Ambroise D. As printer, and especially as engraver and founder, he raised the family name to the pinnacle of professional eminence. The absolutely perfect Roman characters, used in the Louvre editions printed by his elder brother, Pierre D., were engraved and cast by him. Firmin D. applied the stereotyping process to the Logarithmic Tables of Callet, a work that required the most rigorous accuracy of execution, and which, through this means, is perfectly free from error or blemish. The whole of the French, as well as most of the Italian and English classics, were published by him according to the same process. These stereotypic editions (the word *stereotypic* was invented by him) were wonderfully correct and cheap; *Virgile* is without a blemish, is ornamented with vignettes, and was sold for 15 sous (abt. 14¼ cents); it made a kind of revolution in the book-trade of France. The most distinguished foreigners were accustomed to visit D.'s establishment as one of the great sights of Paris. The emperor Alexander, when in Paris, 1814, minutely examined every department of it; and placed under D. two young Russians, to be instructed in all the branches of typography. Some of the most celebrated continental printers served their apprenticeship with him. In 1827, D. retired from business, to give attention wholly to his duties as *député*. A sage friend of freedom, he attached himself to the moderate and constitutional opposition, headed by Royer Collard. D. also obtained considerable reputation as an author by his tragedies, *La Reine de Portugal* and *La Mort d'Annibal*, and several volumes of metrical translations from the classics.

His sons, **Ambroise Firmin** D. (1790, Dec. 20—1876, Feb.), and **Hyacinthe** D., (b. 1794, Mar. 11), long carried on the family business (aided by their sons, **Alfred** D. and **Paul** D.), under the firm of Firmin Didot, Fréres; and in the hands of the survivors, the business still retains its magnitude.

DIDUNCULUS, n. *dī-dŭn'kū-lŭs* [L. dim. of *didus* (q.v.)]: typical genus of the *Didunculidæ*. *D. strigirostris* inhabits the Navigators' Isles. **Diduncu'lidæ**, *-kū'lĭ-dē*, family of *Columbacei* (pigeons), which they connect with the extinct dodo (q.v.).

DIDUS, n. *dī'dŭs* [mod. L.]: genus of *Rasores*, sub-ord. *Columbacei*. *D. ineptus* is the dodo (q.v.). **Didid&aelig;**, *dī'dĭ-dē*, family of birds, of which Didus is the type.

DIDYMIUM, n. *dī-dĭm'ĭ-ŭm* [Gr. *didumos*, double]: an elementary body; a rare metal discovered in intimate association with *lanthanium:* it is found in the minerals **Cerite**, **Allanite**, etc. **Didymous**, a. *dĭd'ĭ-mŭs*, in *bot.*, growing in pairs or twins.

DIDYMOCARPEÆ, n. plu. *dĭd-ĭm-o-kăr'pē-ē* [L. *didymocarpus*—from Gr. *didumos*, twin; *karpos*, fruit]: sub order of plants belonging to the order *Bignoniaceæ*. DIDYMOCAR'PUS, *-pŭs*, typical genus of the sub order *Didymocarpeæ*.

DIDYMOHELIX, n. *dĭd-ĭm-o-hē'lĭks* [Gr. *didumos*, twin; *hēlix*, a fellow, a comrade]: genus of confervoid algæ with the threads consisting of pairs of microscopic, interlacing filaments. They ordinarily occur in ferruginous bog-water.

DIDYMOPRIUM, n. *dĭd-ĭm-ŏp'rĭ-ŭm* [Gr. *didumos*, twin; *priŏn*, a saw]: genus of *Desmidiaceæ*, differing from *Desmidium* in having only two processes, not being angular, etc.

DIDYMUS, *dĭd'ĭ-mŭs*, OF ALEXANDRIA: B.C. 311—B.C. 395; b. Egypt: theologian and philosopher. He lost his eye-sight when 5 years old, but became eminent for his attainments in theology, philosophy, and in various sciences, and was chosen to fill the theological chair at Alexandria. In this office the number of his pupils bespoke the high public esteem of his abilities, and the books which he wrote showed his learning and mental power. Among his pupils were Saint Jerome, Isidore, and Rufinus. Of his numerous works but four have been preserved: *On the Trinity; On the Holy Spirit; Against the Manicheans;* and *On the Canonical Epistles.*

DIDYNAMIA, n. *dĭd-ĭ-nā'mĭ-a* [Gr. *dis*, twice; *dunămis* power]: in the Linnæan system of plants the fourteenth class, consisting of those which have four stamens, two long and two short. It contains two orders, *Gymnospermia* and *Angiospermia*. DIDYNAMOUS, a. *dī dĭn'ă-mus*, having two long and two short stamens, as in the dead-nettles.

DIE, v. *dī* [AS. *deadian;* Icel. *deyja;* Dan. *döe*, to die: Gael. *dioth*]: to cease to live; to expire; to perish; to lose life; to languish, as from weakness, discouragement, or love; to cease or become less distinct, as sound; to vanish; to become vapid. DY'ING, imp. DIED, pp. *dīd*.—SYN. of 'die': to decease; depart; vanish, recede; decay; decline; cease; sink; faint.

DIE, n. *dī* [Ar. *daddon*, game of dice: It. *dado;* OF. *det;* F. *dé*, a die—from mid. L. *dadus*, a die—from L. *dătŭm*, given, what is thrown on the table]: a small cube of bone or ivory with dots numbering 1 to 6 on the faces, used in gaming, by being shaken in a small tubular box and then thrown from it; chance; hazard. DICE, n. plu. *dīs:* usually thrown in pairs. When the dice are true cubes, there is no plan by which any kind of shaking can bring out a desired number; but some gamblers use loaded dice, plugged with lead on a particular side to bring certain numbers uppermost: see GAMBLING. THE DIE IS CAST, everything is hazarded; the last chance is taken or offered.

DIE, n. *dī* [Gael. *dith*, to press, to impress: F. *dé;* OF. *del* and *déel*, a thimble—from mid. L. *digĭtālĕ*, a finger]: a stamp of metal used in striking coins, medals, etc. DIES, n. plu. *dīz*. DIE-STOCK, a frame for holding the dies for cutting external screw-threads.

DIÉ, St., *săng dē-ā':* town of France, dept. of Vosges, on the Meurthe, 25 m. n.e. of Epinal. It is handsomely built; its streets are clean and regular. D. is the seat of a bishop, has an old Cathedral church, and various important educational institutions. It has manufactures of cotton goods, with some trade in corn, cattle, flax, hemp, paper, ironmongery, etc. There are copper and iron mines, ironworks, and marble quarries in the neighborhood. Pop. (1881) 12,677.

DIEBITSCH-SABALKANSKI, *dē'bĭtch-sâ-bâl-kân'skē*, Hans Karl Friedrich Anton, Count: 1785, May 13—1831, June 10; b. Silesia: Russian general. He was educated in the Milit. Acad., Berlin, appointed to the Russian imperial guard 1801, promoted capt. for gallantry at Austerlitz 1805, studied milit. science 5 years, and became maj. gen. 1812. In 1813, while chief of staff to Gen. Wittgenstein, he greatly distinguished himself at Lützen, and later at Leipsic, where the czar appointed him lieut.-gen. on the battle-field. He was appointed chief of the imperial staff 1820, went with Czar Alexander on his tour of the s. of Russia, and was with him at his death, 1825, On the accession of Nicholas he was appointed baron, then count. He was placed in command of a large army in the Russo-Turkish war of 1828,9, took Varna, marched across the Balkans, and forced the peace of Adrianople. He received the name *Sabalkanski* (crosser of the Balkan) from this feat, became gen.-in-chief 1829, and field-marshal and gov. of the provinces bordering on Poland 1830. He crossed the Polish frontier 1831, Jan. 25, fought several indecisive engagement and battles, and died of cholera suddenly in his camp, June 10.

DIEDENHOFEN, *dē'dĕn-hō-fĕn* (Fr. Thionville): fortified town, province of Alsace-Lorraine, Germany, on the Moselle river and the Metz and Luxemburg railroad, 14 m. n. of Metz. It has numerous manufactures, a public gymnasium, and botanic garden. It was frequently the residence of the Carlovingian kings of France, belonged at times to the Count of Luxemburg, and to Burgundy, Austria, and Spain, was annexed to France 1643, and after being bombarded by 85 guns for 3 days without cessation surrendered to the Germans, 1870, Nov. 24, with its garrison of 4,000 men, 187 guns, and a large amount of milit. stores.

DIEFFENBACH, *dēf'fĕn-bâch*, Johann Friedrich: 1792–1847; b. Königsberg, Prussia: surgeon. He had begun the study of theology when the war of liberation broke out, in which he took part as a volunteer. In 1816, he exchanged the study of theology for that of medicine, especially surgery. After studying at Bonn and elsewhere, and travelling in France, he took his degree 1822, and commenced practice in Berlin, where he soon attained distinction as an operator, and in 1840 was promoted to be prof. and director of clinical surgery. Besides eminent skill in all the usual operations with the knife, D. introduced many improvements, particularly in the art of forming new noses, lips, eyelids, and the like, as well as in cutting the muscles for squinting and stammering. Among his writings were: *Die Transfusion des Bluts und die Einspritzung der Arzneien in die Adern* (Berl. 1828); *Ueber die Durchschneidung der Sehnen und Muskeln* (Berl. 1841); *Die Heilung des Stotterns* (Berl. 1841); *Die Operative Chirurgie* (12 vols. Leip. 1844–48), his chief work, translated into several languages.

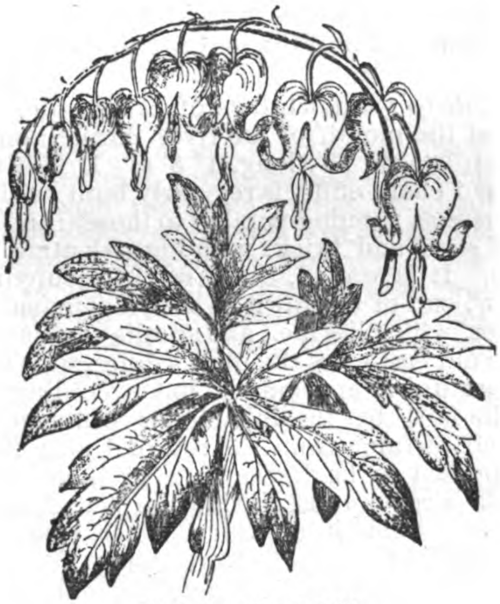
DIEFFENBACHIA, n. plu. *dēf′n-băk′ĭ-ă* [after M. *Dieffenbach*]: a genus of tropical plants of Amer. ord. *Arācēæ*, consisting of herbs having tall fleshy stems; the new greenhouse species has a leaf-blade of about 12 × 4 in. whose centre is beautifully variegated.

DIEGESIS, n. *dī-ĕ-jē′sĭs* [Gr.—from *diēgeomai*, I set out in detail, I narrate]: a description, narrative, history, or recital.

DIE′GO, SAN: see SAN DIEGO.

DIELECTRICS, n. plu. *dī′ĕ-lĕk′trĭks* [Gr. *dia*, through, and Eng. *electric*]: those bodies which admit of electrical induction acting through them, as glass, dry air, etc.

DIELYTRA, *dī-ē-lĭt′ra:* genus of plants of the nat. ord. *Fumariaceæ*, in appeatance and habit much resembling fumitories of extraordinary size. *D. spectabilis*, native of Siberia and the provinces of China, was introduced into Britain from the island of Chusan 1846, and rapidly became a general favorite, on account of its long racemes of drooping, delicate, rosy-pink flowers. It is now seen not only in green-houses, but commonly in cottage-windows, and even in cottage-garden, though in more northern regions it seldom attains its full luxuriance in the open air. It is one of the favorite plants of the Chinese.



Dielytra Spectabilis.

DIEPENBECK, *dē'pĕn-bĕk*, ABRAHAM VAN: prob. 1607–75; b. Hertogenbosch (Bois-le-Duc): Flemish painter. At first he confined himself to painting on glass in which he acquired the best reputation of his time; but having conceived a disgust for this kind of painting, on account of the cracking of the glass, which he could in no way prevent, he abandoned it, and became a pupil of Rubens. He then went to Rome, and on his return to Belgium became a sort of assistant to his master. In 1641, he was elected president of the Antwerp Acad., an honor which he retained till his death. D. painted much, and with wonderful facility, on tapestry and wainscoting. He certainly imitated Rubens, but with great freedom and force of coloring. His works consist mostly of designs for title-pages, theses, devotional subjects, and the decoration of books. They show great fertility and liveliness of genius, but are in general hurriedly and imperfectly finished. His masterpiece in this way is the *Tableaux du Temple des Muses* (Paris 1655), a series of designs, 59 in number, engraved by the best artists of the time—Bloemart, Maltram, etc. Those of Bellerophon, Orpheus, the Dioscuri, Leander etc., have been pronounced unsurpassed. His oil paintings on canvas are few, but the churches of Antwerp have many windows painted by him. D. resided in England for some time during the reign of Charles I., and painted several landscapes and animals for William Cavendish, Duke of Newcastle.

DIEPPE, *dē-ĕp':* seaport town of France, dept. of Seine-Inférieure, at the mouth of the river Arques, on the English Channel; lat. 49° 55′, long. 1° 5′ e. D. is between two high ranges of chalk cliffs, is regularly built, with tolerably wide clean streets running parallel to the sea: and the houses —mostly of stone and brick, with high slanting roofs—are picturesque. It is walled, has a castle occupying a high cliff at the w. end of the town, which it commands, as well as the harbor, which lies n.e., and admits vessels of 500 tons. West of the old castle lies the little fishing suburb of Pollet, far from beautiful in appearance, but exceedingly interesting from the fact that the inhabitants differ in language, manners, and costume from the rest of Upper Normandy, and are supposed to be descendants of those Saxons who settled on the French coast during the period of the Merovingian kings. Some interesting historical associations attach to the castle of Dieppe. Here Henry IV.—the people of D. having been the first to acknowledge his right to the throne of France—retired before the forces of the League, previous to the decisive battle of Arques, fought within four miles of D.; and here the Duchess of Longueville, noted as a leader of the party of the Fronde, sought refuge for a time from the royal power that she had defied. The castle is now occupied as a barrack. The other principal buildings are the churches of St. Jacques and St. Remi, the theatre, and a bathing establishment. The town has several squares, and is adorned by nearly 70 fountains, which derive their supply of water from an aqueduct about three m. long. D. being one of the principal watering-places of

France, has a great accession of visitors during the summer months; and a large number of huts for the accommodation of bathers (bathing-machines being dispensed with) line the shores. The manufactures are lace, fine linen, and paper; and the carved articles of horn, bone, and ivory have long been famous. There are also ship-building yards, sugar refineries, rope-walks, and distilleries; and the fisheries—both coast and Newfoundland—are important, almost the whole of the population of the suburb of Pollet being engaged in them. The rise of Havre has greatly injured the trade of Dieppe. D. is a favorite landing-place of English tourists visiting France. Pop. (1881) 21,585.

DIERVILLA, n. *dī-ĕr-vĭl'la* [named by Tournefort after M. *Dierville*, who brought him specimens of it from Canada]: genus of erect shrubs, belonging to the order *Caprifoliaceæ*.

DIE'-SINKING: art of engraving the die or stamp used for striking the impression on coins, etc., and for stamping thin plates of metal into various devices.

The importance of die-sinking has much increased of late on account of the great extension of the process of stamping thin metal. Many kinds of work formerly bent into shape by the hammer and punch, are now struck by a few blows between suitable dies; e.g., the ornamental work of gas-fittings, window-curtain cornices, common jewelry, ornamental trays, dishes, boxes, etc. For such purposes, a pair of dies is required, one in relief, the other in intaglio, and the metal is pressed between them. Not only are ornamental articles stamped in this manner, but useful articles, composed of many parts, are made entirely by cutters and dies, each part being cut and stamped by a pair of dies, and then the parts united by another pair, the junction being effected by over-laps, which the uniting dies press into their places: see BUTTONS. The astonishing cheapness of many of the Birmingham products is due mainly to the use of dies for doing by a single blow the work that formerly required long and tedious manipulation: see STAMPING.

The most ancient and familiar application of dies, is in the striking of coins and medals; the method of sinking the dies used for this purpose will serve to illustrate the general method. Suppose the coin to be of the size of a quarter of a dollar: a cylindrical piece of steel, three or four inches in length, and two in diameter, is prepared by slightly rounding one end of the cylinder, then turning and smoothing upon the middle of this a flat face equal to the size of the coin. This blank die, which is carefully softened, is then engraved with the device of the coin in intaglio. This is a very delicate and artistic process, and is effected by a great number of careful touches with small and very hard steel tools. The face of the die is now hardened by placing it face downward in a crucible upon a layer of bone-dust, or a mixture of charcoal and oil. In this position it is raised to a cherry-red heat, then taken out, and plunged into water. When properly tempered, it is in a state to be used for stamping the coin; but dies of superior workmanship, from which many impressions are required, are not thus directly used, as the expense of engraving is very great, and the risk of breakage considerable. This first engraved die, called the matrix, is therefore reserved only for making other dies. An impression in relief is made from this matrix on a small block of soft steel, which is called the puncheon; this is retouched and hardened, and from it the dies directly used for striking the coins or medals are impressed.

When the engraving is not very costly, or a small number of impressions are required, or a soft metal is to be stamped, as in livery buttons, the work is stamped directly from the engraved die or matrix. When the device is in high relief, and the metal is hard, many heavy blows are required. Some of the finest large bronze medals require two or three hundred blows for each impression, and the medal has to be annealed by heating between every two or three blows. It is on this account that the difference between the price of pewter and bronze medals of the same subject is so great, the pewter being so much softer. Copper, though harder than pewter, is much softer than bronze, and hence the device on new bronze coinage is in much lower relief than the old copper coinage: it would not pay to use repeated blows and annealing in striking common coins. An impression in high relief or deep intaglio may be obtained by a single blow by the *cliché* method. For this, a fusible alloy is used, such as type-metal, or still better, an alloy of 2 parts bismuth, 1 lead, and 1 tin, which fuses at about 212°, and becomes pasty before solidifying. The metal is poured into a box or tray a little larger than the die, and when in a pasty condition, the die is placed over it, and struck smartly with a heavy mallet or a coining-press. A steel die is by no means necessary for this; sharp impressions may be obtained from bronze medals themselves, or even from wood and plaster casts. A cliché mould may be made in the first instance from the medal, and then a cliché relief from this mould, if the process is skilfully conducted. The skill required consists mainly in striking the blow with a force proportionate to the depth of the impression and the softness of the metal, and in selecting the right moment for doing so, just as the fused metal is on the point of solidifying; for, if too fluid, it will merely be driven aside; and if at all set, an imperfect impression results. The metal should be of about the consistence of melted sealing-wax, and then the surface is set by contact with the cool die or medal, while the body of the metal still yields to the pressure. Cliché moulds are admirably adapted for electro-depositing.

DIES IRÆ, *dī'ēz ī'rē* [L. day of wrath]: a famous mediæval Latin hymn on the Last Judgment, so named from its opening words. On account of the solemn grandeur of the ideas which it brings before the mind, and the deep emotions that it is fitted to excite, it soon found its way into the liturgy of the church. The authorship of the hymn has been ascribed to Gregory the Great, St. Bernard of Clairvaux, Umbertus, and Frangipani, the last two of whom were noted as church-hymnists; but in all probability it proceeded from the pen of the Franciscan, Thomas of Celano, native of the Abruzzi, in the kingdom of Naples, who died about 1255. The date when the church adopted it, and made it a portion of the service of the mass, cannot be ascertained with exactness, but it must have been before 1385. Several alterations were then made in the text; that, however, is believed to be the original which is engraved on a marble tablet in the church of St. Francis at Mantua. Germany has produced many translations of the hymn, such as those of Schlegel, Fichte, and Bunsen. It was translated into English by Richard Crashaw in the 17th c., and by Lord Macaulay, Lord Lindsay, the Rev. Isaac Williams of Oxford, and others in our own day. Sir Walter Scott has introduced two or three of the opening verses into his *Lay of the Last Minstrel.* The following are the most effective stanzas of the original Latin:

Dies iræ, dies illa
Solvet sæclum in favilla,
Teste David cum Sibylla.

Tuba mirum spargens sonum
Per sepulcra regionum
Coget omnes ante thronum.

Mors stupebit et natura,
Quum resurget creatura
Judicanti responsura.

Liber scriptus proferetur,
In quo totum continetur
Unde mundus judicetur.

Judex ergo cum sedebit,
Quidquid latet apparebit,
Nil inultum remanebit.

Quid sum miser tunc dicturus,
Quem patronum rogaturus,
Quum vix justus sit securus?

Rex tremendæ majestatis,
Qui salvandos salvas gratis,
Salva me, fons pietatis.

Recordare, Jesu pie,
Quod sum causa tuæ viæ:
Ne me perdas illa die.

Quærens me sedisti lassus,
Redemisti cruce passus,
Tantus labor non sit cassus.

Qui Mariam absolvisti
Et latronem exaudisti,
Mihi quoque spem dedisti.

Inter oves locum præsta,
Et ab hœdis me sequestra,
Statuens in parte dextra.
Amen.

DIESIS, *dī'ē-sĭs:* term used by the ancient Greeks, in the division of musical intervals, of which they had three varieties. In modern music the D. is understood to be the difference between the small and the great semitone, as from C to C sharp, and from C to D flat.

DIESKAU, *dēs'kow*, LUDWIG AUGUST, Baron VON: 1701–1767, Sep. 8; b. Saxony: soldier. He received a milit. education, and after serving in the German army entered that of France, was appointed adj. to Marshal Saxe, and accompanied him on his Netherlands campaign. In 1748 he was promoted brig.gen. of inf., and appointed commander of Brest, and 1755 was sent to Canada as commander of the French troops operating against the British. At the head of a force of 200 regular troops, 600 Canadians, and as many Indians, he proceeded up Lake Champlain with the intention of attacking Fort Edward. On Sep. 8 his regulars attacked the English center, while the Canadians and Indians were charged wtth the assaults on the flanks; but as soon as the English opened with their batteries his allies became panic-stricken and fled. He received three wounds before ordering the retreat, and while resting against a tree entirely alone received a fourth in his hip, and was taken prisoner. On his liberation and return to France, he was pensioned by the government.

DIES NON, *dī'ēz nŏn* [L. day not]: in *law*, a non-business day, that is such days as Sunday, and legally appointed holidays.

DIEST, *dēst:* town of Belgium, province of Brabant, on the river Demer, 17 m. n.e. of Louvain. It is a walled town, and its fortifications have recently been so improved as to render it a place of great strength. D. has considerable manufactures of hosiery and woolen goods, but its chief products are beer—of excellent quality, and largely exported—and gin. Here a great horse-fair is held annually. D., anciently a feudal barony, under the dominion of the princes of Orange, was taken by Marlborough 1705. Pop. (1880) about 8,000.

DIET, n. *dī'ĕt* [F. *diète*, diet, daily fare—from mid. L. *diæta;* Gr. *diaita*, mode or place of life, means of life, a dwelling for living in. It. *dieta;* Gael. *diot*, a meal: see DIET 2 (Note)]: food or victuals; allowance of provision; food regulated by medical order: V. to furnish food; to eat according to prescribed rules. DIETING, imp. *dī'ĕt-ĭng:* N. the act of eating according to prescribed rules. DI'ETED, pp. DI'ETER, n. one who prescribes rules for eating. DI'ETARY, n. *-ĕ-tėr-ĭ,* course or order of diet; allowance of food in a workhouse, a prison, etc.—For *military dietary*, see BAKERIES, ARMY: COMMISSARIAT: COOKERY, ARMY: RATION.—*Naval Dietary*, as arranged in fitting out naval vessels, is calculated on two data—the established allowance or ration of certain articles, and the average experience of past years regarding certain other articles. Under the first category the ration is everywhere equal, from the admiral down to the humblest sailor; under the second, the differences are very wide.—The Dietary for *emigrant ships* sailing from Britain is regulated by law, according to the number of emigrants and the length of the voyage: ADJ. relating to diet. DI'ETET'IC, a. *-tĕt'ĭk*, or DI'ETET'ICAL, a. *-ĭ-kăl*, pertaining to rules for the proper use of food. DI'ETET'ICS, n. plu. *-ĭks*, rules for diet, treating on the quantity and quality of particular kinds of food suited to the digestive organs; the science or philosophy of diets. DI'ETET'ICALLY, ad. *-lĭ.*—As to *Diet*, man and animals generally require that their food should be of such nature and quantity as to compensate for the perpetual wear and tear of the tissues, and as at the same time to keep up the animal heat at its proper standard. Various classifications of the food of man have been at different times proposed, but those most generally accepted are that of Dr. Prout—in which the different kinds of food are grouped in definite chemical classes—and that of Liebig, which has reference solely to the ultimate destination of the food in the animal economy.

Dr. Prout classifies all kinds of food under these heads: 1. The *aqueous;* 2. The *saccharine;* 3. The *oily* or *oleaginous;* and 4. The *albuminous;* to complete which, should be added 5. The *gelatinous*, and 6. The *saline*. Liebig makes only two classes: 1. Those consisting of nitrogenized matters, which are adapted for the formation of blood, and which he terms the *plastic elements of nutrition;* and 2. The non-nitrogenized substances, which from their large amount of carbon, serve (as fuel) to keep up the animal heat, and which he names the *elements of respiration*. Recent investigations throw doubt on Liebig's view, that before food can be made available for the performance of work, it must first be turned into muscular tissue and then oxidized. It seems now most probable that it is the oxidation of the non-nitrogenous substances, and not of muscle, that contributes chiefly to the production of muscular force. Starch, fat, and the other non-nitrogenous substances would therefore have to be regarded as force-producers, and not, as formerly, mere heat-givers.

It seems wisest therefore to adopt Prout's classification.

It was based on the consideration, that the milk (the only *single* article of natural food that serves to support the animal body) is made up of substances which may be taken as representatives of his groups; for this, our earliest natural diet, contains water, sugar (representing his saccharine group), butter (representing his oleaginous group), caseine (a nitrogenous matter very similar to albumen, and representing his albuminous group), and salts; and recent researches have shown that the yolk of the egg, which serves for the nourishment of the chick or other young animal before birth, similarly contains one or more representatives of the aqueous, saccharine, oleaginous, albuminous, and saline groups.

1. The *aqueous* group includes water and all the fluids which are used as drinks; and we must additionally bear in mind that all the varieties of animal and vegetable food which we term solids, in reality contain water, generally in great abundance; thus, for example, uncooked beef, contains 70 to 80 per cent., and some vegetables even a larger proportion of water. The uses of water are sufficiently obvious from the abundance in which it occurs in all the most important fluids of the body, as the blood, and the various digestive fluids. See DIGESTION, ORGANS AND PROCESS OF.

2. The *saccharine* group includes the different varieties of sugar, starch, gum, and cellulose, together with vinegar. This group is chemically characterized by all its members being included in the formula $C_aH_bO_b$; that is to say, they consist of carbon, together with hydrogen and oxygen in the proportions in which these elements form water. Hence (excepting vinegar) these substances have received the name of Carbo-hydrates.

Of the sugars, grape-sugar or glucose is the most important, partly from its frequent occurrence in ordinary articles of food, such as fruits of most kinds, honey, etc., and partly because it is the form of sugar into which starch (a most abundant ingredient in most kinds of vegetable food) is converted by the saliva, and pancreatic and intestinal juices, before it is fitted for absorption or any further changes. Since the sugars (which may thus be regarded as including starch) do not, in the normal condition, pass into the excretions, but are oxidized in the blood into carbonic acid and water, as ultimate products, they must contribute materially to the support of the animal heat. But they have other uses (see in conjunction with this article, that on DIGESTION). Before becoming oxidized into their final products, they undergo various phases of less perfect oxidation, in which lactic, acetic, butyric, and other acids are evolved, of which the most important and abundant is lactic acid, which is found in considerable quantity in the small intestine, where it is doubtless of service in contributing to dissolve any nitrogenous matters which have escaped the action of the gastric-juice. Another use of these acids which are developed from the sugars is, that by acidifying the albuminous intestinal contents, they greatly increase their diffusibility through the intestinal membranes into the lacteals, and probably the capillaries. Here we probably have the clew to the therapeutic use of acids in various disorders of the chylopoietic viscera. Under certain conditions, the sugars are also converted into fat in the body. The researches of Boussingault on milch-cows, of Milne Edwards and others on bees, and of Lacaze-Duthiers on the insects inhabiting galls, distinctly show that starch and sugar are capable of being converted into fat in the animal organism.

The remaining carbo-hydrates are of little or no value as food. There has been much difference of opinion as to whether gum can be taken up and applied to any definite uses in the organism; but the great mass of the most trustworthy observations tend to show that it passes through the system unchanged. Independently of experiments on animals by Boussingault, Lehmann, and others, Dr. Hammond (an American chemist and physician) found from experiments upon himself (1) that gum is altogether incapable of assimilation, and therefore possesses no calorifacient or nutritive power whatever, but is, on the contrary, a source of irritation to the digestive organs; and (2) that in consequence of the above fact, the solids of the urine during a purely gum-and-water diet are entirely derived from the waste of the tissues of the body, while the carbon exhaled (as carbonic acid) from the lungs is derived from the consumption of the fat.

Cellulose, or the substance of the vegetable cell, resists the action of the digestive fluids, and reappears unchanged in the fæces.

Vinegar is probably only of use indirectly in softening animal textures which are taken as food.

3. The *oleaginous* group includes all the fats and oils, whether derived from the animal or the vegetable kingdom. The members of this extensive group are composed of carbon (ranging from 60 to 80 per cent.) and hydrogen, with a little oxygen. Fat which has been taken with the food is mainly absorbed by the lacteals, though a portion of it passes directly into the capillaries of the villi, as has been shown by microscopic examination, which has revealed the presence of fat-granules among the blood corpuscles. For the modifications which are impressed upon the fats, to prepare them for absorption, see DIGESTION. Their uses in the system are various. In their oxidation in the organism, whether the process be gradual or rapid, a large amount of heat is liberated; and that they are oxidized, and for the most part ultimately resolved into carbonic acid and water, is evident, because they neither appear in any quantity in the excretions nor accumulate beyond a certain point in the organism. Moreover, in artificial, and doubtless in natural digestion, the presence of a little fat accelerates the solution of nitrogenous matters taken as food. Lastly, the occurrence of fat in milk, in the egg, in all plastic exudations, and in all highly cellular organs, is a clear indication that this substance acts an important part in the process of cell-formation; hence we may

probably explain the therapeutic use of such medicines as cod liver oil.

4. The *albuminous* group contains all those substances chemically known as the proteine-bodies (see PROTEINE), viz., albumen, fibrine, caseine, and the allied vegetable compounds, all of which are composed of very nearly the same proportions of carbon, hydrogen, nitrogen, and oxygen; while additionally they contain a little sulphur or phosphorus, or both; they all contain on an average about 15 per cent. of nitrogen, a substance which has not occurred in the preceding groups. All these proteine-bodies, such as occur in the fluids of the egg, in animal flesh, in the curdy matter of milk, etc., are dissolved by the gastric-juice and intestinal fluid, and converted into matters termed *peptones*, which although similar in their ultimate composition to the substances from which they are derived, differ from them in their greater solubility and their more ready diffusibility through animal membranes. Like the fats, they are chiefly absorbed by the lacteals, but to some extent by the capillaries. A reference to the chemical composition of the milk and of the fluids of the egg, shows that all the nitrogenous tissues of the body of the young animal must have been primarily derived from albumen or caseine; and it is established beyond all doubt, that these substances are throughout life the essential producers of blood, and consequently of the various nitrogenous structures which are built up from that fluid.

5. The *gelatinous* group (which formed a part of Prout's albuminous group) includes the different varieties of gluten, obtained by boiling, from many animal tissues; as, for example, bone cartilage, tendons, skin, hoofs, etc. All soups and jellies which stiffen on cooling contain it, and such substances are popularly, but erroneously, regarded as highly nourishing. Unlike the preceding group, from which they only slightly differ in ultimate composition, they do not appear to form new blood, and their uses are still questionable; one function of them, suggested by Liebig, seems probable—viz., that these substances may go directly to the formation of such tissues as yield gluten on boiling, and which, if this food were not taken, would have to derive their nourishment from the members of the preceding group.

6. The *saline* group. With the exception of common salt (chloride of sodium), which is used instinctively as additional to most kinds of food, the members of this group are taken unconsciously in the different articles of solid and fluid food. Since we invariably find phosphate and carbonate of lime in the bones, in fixed and definite proportions; since we invariably find a nearly fixed proportion of chloride of sodium, alkaline phosphates, and other soluble salts, in the blood, flesh, milk, etc.; and since, further, we find that these substances are being constantly eliminated by the urine, it is obvious that they must be replaced by the food, if we would keep the organism in its normal state. The evil consequences of a deficiency of any of these ingredients of food are well known; thus, when too little phosphate of lime (to which bone owes its firmness and hardness) is

taken into the system, or when too much is again taken out (as occasionally, during pregnancy, when the fetal bones require it for their ossification), fractures do not readily unite.

It is only comparatively recently—during the last quarter of a century—that physiologists have satisfied themselves, that in order to supply the wants of the system, food must consist of a combination of these groups; and that animals which are fed exclusively on food belonging to one of the groups—as, for example, albumen or fibrine—perish under symptoms of inanition, as certainly as if they had been deprived of all nourishment. As in the infant's milk we find the albuminous, oleaginous, saccharine, and saline groups represented by the caseine, butter, sugar, and salts, so, for other periods of life, the food, whether derived from the animal or vegetable kingdom, must contain a due (though not necessarily the same) proportion of the different types. Again, in judging of the nutritive value of any kind of food, we must take into consideration its digestibility. Thus, the experiments made by Dr. Beaumont on Alexis St. Martin (a Canadian, in whom there was, in consequence of a gun-shot wound, a fistulous opening leading from the exterior to the interior of the stomach), and recent experiments made by Busch on a woman with a fistulous opening into the jejunum (see ALIMENTARY CANAL), show, for example, that hard-boiled eggs, meat that has been boiled for a long time, and hard cheese, which is poor in fat, are less easily and rapidly digested than soft-boiled or fresh eggs, meat steeped in vinegar, or moist, fat cheese, and that starch is much more readily converted into sugar when boiled than in the raw form.

As the nitrogenous constituents of the food (articles containing albumen, fibrine, etc.) are chiefly employed in the formation of the blood and the reproduction of the tissues, it was at one time thought that the quantity of nitrogen which any kind of food contained might be taken as a measure of its nutritive value; but this test is not altogether to be relied on, since the nitrogen in part depends upon the gluten-yielding matters, which probably contribute little or nothing to the formation of textures.

Both daily experience and chemico-physiological observations show us that the best kinds of food contain both fat and carbo-hydrates, in addition to albuminous matters. Instinct teaches us to combine highly amylaceous foods with fats; as, for example, bread and butter, beans and fat bacon; and the increased digestibility of such mixtures proves, no less than the simultaneous occurrence of fat and sugar in the milk and in the egg-fluids, that both substances are necessary, as independent ingredients of food, though, perhaps, one may temporarily serve as substitute for the other. Unfortunately, we have no trustworthy data for determining the proportion in which the different nutrient groups should be combined to form the food best suited to the general wants of the organism. The proportions occurring in human milk are the following: 10 parts of plastic or blood-forming matter (caseine), 10 parts of fat (butter), 20 parts of a carbo-hydrate (sugar), and 0·6 of a part of salts. For the wants of adult life, a lesser ratio of plastic matter (albumen, etc.), would probably suffice.

The absolute quantity of food required for the maintenance of the human body in health varies so much with the age, sex, and habits of the individual, and with circumstances, that it is impossible to fix a standard applicable to every case; but from the consumption of food by large bodies of healthy men, such as soldiers and sailors, we can determine with tolerable accuracy the *average* daily quantity. The following remarks are from Todd and Bowman's *Physiological Anatomy and Physiology of Man:* 'Each seaman in the British naval service is allowed from 31 to 35½ ounces of dry nutritious food daily, of which 26 ounces are vegetable, and the rest animal; the latter consisting of 9 ounces of salt meat, or 4½ of fresh. Sugar and cocoa are also given. The soldier is allowed a pound of bread, and three-quarters of a pound of meat. In most of the London hospitals, full diet, which is given to convalescent patients who need a liberal diet, consists generally of half a pound of meat, with from 12 to 14 ounces of bread, half a pound of potatoes, a pint of milk, and sometimes beer or porter—a pint of the former, or half a pint of the latter. The former dietary is destined for men who must be in readiness for the most active athletic exercises, requiring not only great muscular strength, but also considerable power of enduring fatigue. The latter is intended to recruit the powers of those who have been suffering from disease. If, now, we compare with these a dietary which has been found sufficient for the support of health in a state of more or less confinement, with a moderate amount of daily labor, we may fairly infer that the proper allowance for persons not engaged in actual manual labor lies between these extremes. In the union workhouses of England, able-bodied men obtain about 25 ounces of solid food daily, of which the quantity of meat does not exceed 5 or 6 ounces. In prisons, it has been found necessary to give a certain amount of animal food to prisoners who are subject to hard labor. Each of such prisoners, if confined for a term exceeding three months, and kept at hard labor, has a daily allowance of about 36 ounces of food, of which meat constitutes only a very small portion—namely, about 16 ounces in the week. The prisoner has obviously the advantage of the poor man, whose only crime is poverty; but there is doubtless sufficient justification for this in the fact, that the labor of the prisoner, and the mental depression which long-continued restraint and confinement induce, render a greater amount of nutriment necessary than the indigent would require, who seek in the workhouse a shelter from absolute want.' For further details on this subject, which is of great practical importance, see a paper by Dr. Lyon Playfair, 'On the Food of Man under Different Conditions of Age and Employment,' 56th vol., *Edinburgh New Philosophical Journal* (1845); also a memoir by Dr. E. Smith upon 'Prison and other Dietaries': also Dr. Pavy's *Treatise on Food and Dietetics* (2d ed. 1875).

It appears, then, that a daily amount of food, varying from 35 to 25 ounces, is sufficient to maintain health; and of this a fourth or fifth part ought to be animal food; but in special cases, much more or much less may be taken without apparent injury. The smallest quantity of food upon which life is known to have been supported with health and strength, is that on which Cornaro—whose history is recorded in most books on Diet and Dietetics—states that he subsisted for 58 years in order to reduce extreme corpulence—viz., 12 ounces of food, chiefly vegetable, with 14 ounces of light wine. In contrast with Cornaro's case, are instances recorded by Parry and other arctic voyagers of the voracity of the natives of those cold regions. A young Esquimaux, who was allowed 'unlimited diet,' availed himself of the privilege to the extent of devouring, in 24 hours, 35 lbs. of various kinds of food, including tallow-candles; and the Cossacks of Siberia are reported to consume daily from 12 to 20 lbs. of animal food.

An article upon diet would be imperfect without a reference to the best mode of dressing meat, for cookery and digestibility are closely allied. Most persons find meat that has been broiled most easily digested. The fire should be brisk, so that the albumen on the surface of the meat may be coagulated rapidly, and thus retain the internal juices. A similar rule applies, for the same reason, to boiling and roasting. When meat is to be boiled, it should be plunged into water already boiling; while, if soup is to be made, the meat should be put into cold water, and the temperature slowly and gradually raised—the object, in the former case, being to retain, in the latter, to extract, the nutritious fluids. (See BOILING: BROILING.) Fried meat and rich stews are usually very indigestible. Salted meat is not only harder and more indigestible than fresh meat, but the process of salting extracts important salts and much of the nutrient juice from the meat; the only exception being fat pork, which is rendered more digestible by salting. On this subject, see Leibig's *Researches on Food,* 1847.

A class of substances—alcohol, tobacco, tea, coffee—though hardly entitled to be termed foods, may fairly be considered, from the universality of their use, to exert some definite influence on the organism, and to supply certain existing, though, perhaps, undefined wants.

From three series of observations made upon himself, Dr. Hammond arrives at the conclusion, that 'alcohol increases the weight of the body, by retarding the metamorphosis of the old, and promoting the formation of new tissues, and limiting the consumption of fat.' The respiratory and urinary excretions, and the fæces, were invariably diminished. These effects occurring when the amount of food was below the quantity required to maintain the weight of the body, were productive of no deleterious result to the system; but when the food was sufficient to balance the waste from the excretions, and still more, when an excess of ailment over the demands of the system was ingested, the health was disturbed, and disease almost induced. Hence he concludes that the laboring-man, who can hardly find bread and meat enough to preserve the balance between the formation and decay of his tissues, finds in alcohol an agent which, if taken in strict moderation, enables him, without disturbing his health, to dispense with a certain quantity of food, and yet keeps up the weight and strength of his body. On the other hand, he who uses alcohol when his food is more than sufficient to supply the waste of tissue, and, at the same time, does not increase the amount of his physical exercise, or drink an additional quantity of water (by which the decay of tissue would be accelerated), retards the metamorphosis, while an increased amount of nutriment is being assimilated, and thus adds to the plethoric condition of the system which excessive food has a tendency to produce.

Tobacco, according to the experiments of the same excellent observer, resembles alcohol in these respects, that when the food is sufficient to preserve the weight of the body, it increases that weight; and when the food is not sufficient, and the body, in consequence, loses weight, it restrains that loss; but it differs from alcohol in being not attended with any unpleasant effects upon the circulation, though its action on the brain is apparent in increased nervous excitement, followed by a pleasant feeling of ease and contentment. In these experiments, Dr. Hammond, who was not in the habit of using tobacco in any form, smoked 450 grains daily. Dr. Brinton, in his excellent article on 'The Stomach and Intestine,' in the *Cyclopedia of Anatomy and Physiology*, refers to an instance of the partial starvation of a large ship's crew on a long voyage, in which the *chewers* of tobacco were alleged to have endured hunger far better than the other sufferers, while the *smokers* did not enjoy the same advantage. This fact, however, does not invalidate Dr. Hammond's statement, and only shows, as might *a priori* have been expected, that the effects of chewing are more powerful than those of smoking. When the system receives its due supply of food, tobacco, if used at all, should be used in moderation.

Tea and coffee are usually believed to have a somewhat similar effect to that shown to be produced by alcohol and tobacco; though the power of tea in arresting the waste of tissues has been called in question, and its continued immoderate use has been found highly injurious to the digestion. The value of alcohol and other stimulants is discussed in the *Alcohol Question* (1879), by Sir James Paget, Dr. Brunton, etc. See FOOD AND DRINK.

DIET, n. *dī′ĕt* [F. *diète*, a diet, daily fare, an assembly—from mid. L. *diæta*, a ration of food: L. *dĭēs*, a day: OE., *day* or *diet*, an appointed day for hearing a cause or for the meeting of an assembly]: a deliberative assembly formerly held in Germany and Poland, and now in the Austrian empire and Switzerland; a parliament: in *Scot.*, a meeting in a church for divine worship.—The Diet of the German States was a body of great antiquity, not representative but feudal: when feudalism passed away, it became a congress of the princes, gradually declined in importance, and finally dissolved. DI′ETINE, n. *-tĭn*, a subordinate or local diet. *Note*.

—**Diet** means properly the mode of life prescribed by a physician; then, the way or mode of life: and finally a place of entertainment, a dwelling. It has been judged better to give separate entries for *diet*, food—and *diet*, an assembly, though etymologically one word. By the latter entry there appear to be two lines of origin; but the connection with *dies* is really a popular etymology, and an obvious accommodation.

DIET, Desertion of, in Scottish Law: abandonment of a criminal libel by the public prosecutor—the proceedings under such a libel being spoken of technically as a diet.

DIETERICHS, *dē'tė-rĭchs*, Joachim Frederick Christian: veterinary surgeon; b. 1792, Mar. 1; at Stendal, in Prussia. In 1818, he undertook, for the Prussian government, a tour through France, Würtemberg, Bavaria, Austria, and Hungary. On his return, he was appointed to a chair in the Veterinary College of Berlin, which he held for four years. In 1830, he accepted a post in the General Military School of Berlin, where, 1841, he was appointed prof. in ordinary. His publications, widely known, and translated from the German into various languages, include *Pulmonary Consumption in Cattle* (Berlin 1821); *Manual of Veterinary Surgery* (1822); *Manual of Special Pathology and Therapeutics for the Use of Veterinary Surgeons* (1828); *Manual of the Practical Knowledge of Horses* (1834); *Manual of Obstetrics* (1845); *Manual of the Education of Domestic Animals* (1848); *The Principal Defects of Horses, and the Mode of Diagnosing them* (1853).

DIETHERESCOPE, n. *dī-ēth'ėr-ĕ-skōp* [Gr. *dia*, through; *aithēr*, ether, the upper, purer air; or *diaithros*, quite clear and fine; *skopeō*, I look at]: instrument for geodesy and for teaching optics, invented by G. Luvini, of Tunis (1876).

DIETRICH OF BERN, *dē'trĭch:* name under which the Ostrogoth king, Theodoric (q.v.) the Great, appears in the German heroic legends; in which by Bern, his capital, Verona, is to be understood. As early as the 7th c., he seems to have become the centre of a distinct cycle of legends. A little later, he was, with the usual legendary disregard of all historical truth, brought into connection with the traditions of Attila, or Etzel. According to these legends, D. is said to have fled from Italy before Ottacher (Odoacer), or Ermanarich; and with his attendant vassals, to have met a hospitable reception from Etzel; but after many years, to have again got possession of his kingdom. The extermination of the royal House of Burgundy by Attila, which is an historical event, was the cause that D., as well as Etzel himself, was woven into the Burgundian and Frankish Siegfriedssage; and thus he appears, in the second part of the *Nibelungen*, at Etzel's court, and is handled by the poet with special predilection. There have been numerous poems, besides, of which D. was the centre and principal hero. It is very probable that the *Hildebrandslied*, of the 8th c., is the fragment of such a poem. Except this, we have only late versions of these legends; for example, *Schlacht vor Raben* (Ravenna) of the 13th c., *Alphart's Tod*

(13th c.), *Zwerg Laurin, oder der kleine Rosengarten* (15th c.), *Dietrich's Ahnen, Dietrich's Flucht,* etc.

DIETS OF COMPEAR′ANCE, in the Law of Scotland: the day on which a party to a civil or criminal process is cited to appear in court: see SUMMONS: INDICTMENT: INDUCIÆ.

DIEU, n. *dē-ė* [F.]: God.

DIEU ET MON DROIT, *dē-ė ā mŏng drwa* [F.]: God and my right; the motto of the royal arms of England, first adopted by Richard I., at the battle of Gisors, 1198, Sep. 20, afterward assumed as the royal motto by Henry VI.

DIEZ, *dēts*, FRIEDRICH CHRISTIAN: 1794, Mar. 15—1876, May 29; b. Giessen: founder of the philology of the Romanic languages. He was educated at Geissen and Göttingen. In 1819–20 he lived at Utrecht as a domestic tutor; in 1822, went to Bonn as a *privat-docent,* and in 1830 was there appointed prof. of modern literature. His first work, *Altspan. Romanzen,* was issued 1821. He published a great number of valuable works on the Romanic languages, two of which are worthy of special mention—the *Grammatik de Romanischen Sprachen* (Grammar of the Romanic Languages, 3 vols. Bonn 1836–42), and the *Etymologisches Wörterbuch der Romanischen Sprachen* (Etymological Dictionary of the Romanic Languages, Bonn 1853). The last of these works, in particular, is recognized not only by Germans, but by the scholars of all the Romanic nations, as the basis for the scientific study of all the Romanic languages.

DIF, *dĭf:* another form of the prefix DIS, which see.

DIFFARREATION, n.*dĭf-făr-rĕ-ā′shŭn* [L.*diffarreatio*—from *dis*, apart; *farreum*, a cake made of spelt]: in *Rom. antiq.*, the breaking of a cake between man and wife, as a sign of divorce. The opposite of confarreation (q.v.).

DIFFER, v. *dĭf′fėr* [F. *différer*—from L. *differrĕ*, to carry different ways—from *dis*, asunder; *fero*, I bear or carry: It. *differire*—*lit.*, to carry different ways]: to disagree; to be at variance; to be unlike; to quarrel. **DIF′FERING**, imp. **DIF′FERED**, pp. *-fėrd.* **DIF′FERENCE**, n. *-ĕns* [F. *différence*—from L. *differentĭă*]: want of similarity; distinction; that which distinguishes one from another; variation total or partial; contention; quarrel; the point in dispute; the remainder after subtraction. **DIFFERENCE ENGINE**: see CALCULATING MACHINE. **DIFFERENCES, CALCULUS OF FINITE**: see DIFFERENCES.—**DIF′FERENT**, a. *-ĕnt* [F.—L.]: unlike; dissimilar. **DIF′FERENTLY**, ad. *-lĭ.* **DIF′FEREN′TIAL**, a. *-ĕn′shăl,* relating to or indicating difference; pertaining to an infinitely small variable quantity or difference, which is called a *differential quantity;* in *commerce*, creating a difference; special, as *differential duties;* in *mech.*, differing in amount, or in the producing force; intended to produce or indicate difference of motion or effect: N. the infinite small variation of a quantity. **DIF′FEREN′TIALLY**, ad. *-lĭ.* **DIFFERENTIAL CALCULUS**, that part of mathematics which treats of infinitely small variable quantities or differences (see CALCULUS). DIFFERENTIAL WORM-WHEEL, a cog-wheel working with a screw on a shaft. DIF'FEREN'TIATE, v. *-shĭ-āt*, to perform the operation of the differential calculus; to effect a difference as a point of classification; to exhibit clearly different shades or degrees, as of signification; to change from one degree or quality into another; in a diagnosis, to separate one disease from another by pointing out the difference. DIF'FEREN'TIATING, imp. DIF'FEREN'TIATED, pp. DIF'FERENTIA'TION, n. *-ā'shŭn*, determination by means of a change producing a differential character; the production of a diversity of parts by a process of evolution or development; specialization; the clear and distinct exhibition of different shades or degrees, as of signification; in *math.*, process of finding the differential of a function. DIFFERENTIAL GALVANOMETER, a galvanometer with two coils of wire in which currents pass in opposite directions. DIFFERENTIAL QUANTITY, a quantity indefinitely small. DIFFERENTIAL THERMOMETER, an instr. for showing the difference in temperature between two neighboring places: see THERMOMETER.—SYN. of 'differ': to vary; contend; wrangle; oppose; dispute; dissent;—of 'difference': variety; variation; contrast; diversity; contrariety; disagreement; dissimilarity; dissimilitude; variance; contest; dispute; controversy; debate; wrangle; strife; discordance; dissension.

DIFFERENCES, in Heraldry: though often, or indeed generally, confounded with marks of Cadency (q.v.), have, in strict usage, a totally different function—the former being employed to distinguish brothers and their descendants after the death of the father, the latter while he still alive. Differences in this limited sense may consist either of a chief added to or a bordure placed round the plain shield borne by the head of the house; or should the shield exhibit any of the Ordinaries (q.v.), as the bend, fess, pale, etc., the difference may be indicated by an alteration on the lines. The proximity of the bearer to the head of the house is indicated by the character of the line by which the differencing chief, or bordure, or ordinary is marked off from the field, the following being the order usually observed: the first or eldest brother, on the death of his father, inherits the pure arms of the house; the second brother, if the difference is to consist of a bordure, carries it plain; the third ingrailed; the fourth, invected; the fifth, embattled, etc. Other modes of differencing have been invented by heralds, and are not unknown to practice; such, for example, as changing the tinctures either of the field or of the principal figures, of which Nisbet gives many famous examples—altering the position or number of the figures on the shield, adding different figures from the mother's coat or from lands, and the like. Where the cadet is far removed from the principal family, if the field be of one tincture, it is sometimes divided into two, the charge or charges being counter-charged, so that metal may not lie on metal, or color on color. The confusion between differences and marks of cadency, above referred to, is not peculiar to the heraldic usage of England, though there it is more prevalent than in Scotland. In France, the cadets of the House of

Bourbon have been in the habit of continuing these marks, and at the present day, as in Mackenzie's time, the label or lambel is to be seen on the arms of all the members of the Orleans family. That no distinction between what we call marks of cadency and differences was there observed, is further apparent from the fact that, while such was the practice of the House of Orleans, the House of Anjou carried a bordure gules, and that of Alençon a bordure gules charged with eight bezants. In Germany, Sir George Mackenzie says that the several branches of great families distinguish themselves only by different crests (*Precedency*—Works, II., 616); and he gives as the reason, that all the sons succeed equally to the honors of the family. In Britain, and in France, some change is always made on the shield as carried by the head of the house; but the practice even of good heralds has been so irregular, as to bring the rule very nearly to what Mackenzie holds to be the correct one—viz., that every private person should be allowed, with the sanction of the proper authorities, 'to make what marks of distinction can suit best with the coat which his chief bears.'

DIFFERENCES, Calculus of Finite: method in higher mathematics. When we have a series of numbers connected by a regular, though not obvious law, the character of that law may be detected by forming a new series of the *differences* between each term of the original series and the next, and then treating the new series (which we may call the series of 'first differences') in the same way; and so on, till we reach a series of differences the law of which is manifest. Thus,

Given series, . . .	4, 7, 11, 18, 31, 54, 92, 151
First differences, .	3, 4, 7, 13, 23, 38, 59
Second differences, .	1, 3, 6, 10, 15, 21
Third differences, . .	2, 3, 4, 5, 6,

The law of the series of third differences is manifest; we see that its next term must be 7, which gives 28 as the next term of the series of second differences, 87 as the next of the first differences, and so 238 for that of the original series, which we can thus continue to any number of terms. To take a simpler case. Let the series be

	43, 47, 53, 61, 71
First differences, ...	4, 6, 8, 10
Second differences, ...	2, 2, 2

Here the law is manifest in the first differences, and we should be able to calculate the series if we knew the first terms of the three series; viz., 43, 4, 2. It is on this principle that calculating machines (q.v)) can be constructed to compute tables of logarithms, etc. Out of this comparatively simple method of Differences sprang the Calculus of Finite Differences, first treated by Dr. Brook Taylor, under the name of the Method of Increments. This calculus has nothing to do with the Transcendental Analysis: see Calculus, Differential, etc. It deals with the changes of functions when *definite* increments are made to the variables;

while the Transcendental Analysis considers only their changes when indefinitely small or infinitesimal additions are made to the variables. See FUNCTIONS, in Mathematics.

DIFFIBULATE, v. *dĭf-fĭb'ū-lāt* [L. *dis*, away, apart; *fibulo*, I fasten with a buckle; *fibula*, a buckle]: to unbuckle; to unbutton.

DIFFICULT, a. *dĭf'fĭ-kŭlt* [F. *difficulté*, difficulty—from L. *diffĭcultātem*, difficulty, trouble—from L. *diffĭcĭlis*, hard, difficult—from *dis, facĭlĭs*, easy to be made or done]: not easy to be done; hard of accomplisment; attended with labor; arduous; laborious. DIF'FICULTY, n. *-kŭl-tĭ*, that which is hard to be done; an obstacle; perplexity; distress. DIF'FICULTIES, n. plu. *-tĭz*, embarrassment of affairs, chiefly in money affairs.—SYN. of 'difficult': hard; perplexed; austere; rigid; crabbed; unaccommodating; incredulous;—of 'difficulty': impediment; objection; cavil; embarrassment; obstruction; exigency; trouble; distress; trial; controversy; variance; disagreement.

DIFFIDENCE, n. *dĭf'fĭ-dĕns* [L. *diffīdens* or *diffiden'tem*, distrusting—from *dis, fīdo*, I trust: It. *diffidenza*]: want of confidence; distrust of one's self; modest reserve. DIF'FIDENT, a. *-dĕnt*, distrustful of one's own power or ability; modest; timid. DIF'FIDENTLY, ad. *-lĭ*.—SYN. of 'diffidence': distrust; mistrust; suspicion; misgiving; humility; bashfulness; doubt; timidity; fear; hestitation; apprehension; modesty;—of 'diffident': bashful; reserved; distrustful; suspicious, hesitating; doubtful.

DIFFINITIVE, a. *dĭf-fĭn'ĭ-tĭv* [F. *définitif*—from mid. L. *diffĭnitīvus*—from *dis, finītus*, limited, bounded]: final; conclusive.

DIFFLUENT, n. *dĭf-flû-ĕnt* [L. *difflŭĕns*, dissolving—from *dis*, asunder; *flŭō*, I flow]: in *bot.*, dissolving; having the power to dissolve.

DIFFLUGIA, n. *dĭf-flô'jĭ-a* [L. *diffluo*, I flow in different directions—from *dis*, apart; *fluo*, I flow]: genus of rhizopods, family *Arcellina*. They are aquatic, and are contained in a spherical or oblong urceolate incrusted case.

DIFFRACT, v. *dĭf-frăkt'* [L. *diffractus*, broken in pieces—from *dis*, apart; *fractŭs*, broken]: to break or separate into parts, as light: ADJ. in *bot.*, broken into distinct areolæ separated by chinks. DIFFRAC'TING, imp. DIFFRAC'TED, pp. DIFFRAC'TION, n. *-frăk'shŭn* [F.—L.]: in *optics*, the turning aside or breaking up of rays of light which pass very near the boundaries of an opaque body. DIFFRACTION GRATING, a small plate ruled with very fine close lines, by which the rays of light are broken up, and the colors of the spectrum produced.

DIFFRAC'TION, or **INFLEC'TION**, of the **Rays of Light**: breaking up or turning aside of the rays. It was observed by Grimaldi, that if a beam of the sun's light be let into a dark room through a very small hole, the shadows of things in this light will be larger than they ought to be if the rays passed by the bodies in straight lines, and that these shadows have three parallel fringes, bands, or ranks of colored light adjacent to them. This phenomenon was known originally under the name of diffraction, and was supposed to arise from the refraction of the atmosphere. This explanation was disproved by the observations of Newton, who, from the conception which he was led to form of it, called the phenomenon the 'inflection of the rays of light.' It is now identified with a larger class of phenomena, much more completely explained in the later development of the theory of light, and assigned, on the hypotheses of Fresnel, to the interference of undulations: see INTERFERENCE. The observations and experiments of Newton on the subject, as detailed in the third book of his work on Optics, are, however, extremely interesting and instructive, and for accurate observation and description, apart from the imperfect state of the theory, leave nothing to be desired. Having made in a piece of lead a small hole with a pin, whose breadth was the 42d part of an inch, Newton let into the darkened chamber a beam of the sun's light. In this light, the shadows of all bodies were bordered with three parallel fringes or bands of colored light. The shadow of a hair, too, was found to be much broader than the hair itself, and fringes of light were observed within it.

Again admitting light into the darkened apartment by a hole a quarter of an inch wide, he allowed it to pass between two knife-edges parallel to one another. In this case, owing to the breadth of the hole by which the light was admitted, the fringes did not appear within the shadows of the knives until the knife-edges were brought to approach one another, when they appeared. By making the hole smaller through which the light was admitted, they became more distinct. 'As the knife-edges continually approached one another, the fringes grew distincter and larger, until they vanished. The outmost fringe vanished first, the middlemost next, the innermost last; and after they all were vanished, and the line of light in the middle between them was grown very broad, a shadow began to appear in the middle of this line, and divide it along the middle into two lines of light, and increased until the whole light vanished. This enlargement of the fringes was so great, that the rays which go to the innermost fringe seemed to be bent above 20 times more when this fringe was ready to vanish, than when one of the knives was taken away.'

The order of these phenomena is then made clear by the following experiment: 'I caused the edges of two knives to be ground truly straight, and pricking their points into a board, so that their edges might look towards one another, and meeting near their points, contain a rectilineal angle, I fastened their handles together with pitch, to make this angle invariable. The distance of the edges of the knives from one another at the distance of four inches from the angular point, where the edges of the knives met, was the eighth of an inch; and therefore the angle contained by the edges was about 1° 54′. The knives thus fixed together I placed in a beam of the sun's light, let into my darkened chamber through a hole the 42d part of an inch wide, at the distance of 10 or 15 ft. from the hole.' When the fringes of the shadows of the knives fell perpendicularly upon a paper at a great distance from the knives, they were in the form of hyperbolas, and are represented in the following figure.

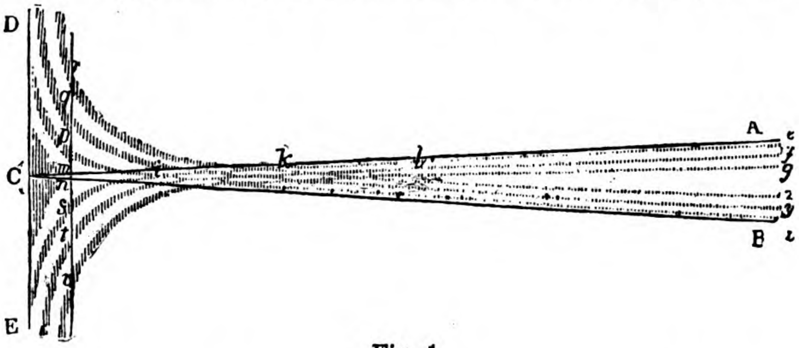


Fig. 1.

In the diagram, CA, CB, are lines drawn upon the paper parallel to the edges of the knives, and between which all the light would fall, if it passed between the edges of the knives without inflection. The lines *eis*, *fkt*, and *qlv*, represent the terminus of the shadow of one of the knives, the dark line between the first and second fringes of that shadow, and the dark line between the second and third fringes of the same shadow. The lines *xip*, *ykq*, and *zlr*, represent the same lines corresponding to the other knife-edge. These lines are hyperbolas, having for asymptotes the line DE, and lines parallel to CA, CB, respectively.

It will be seen that in this experiment the fringes

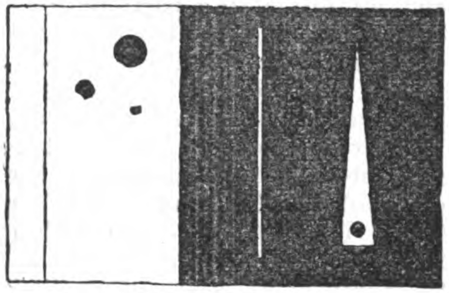


Fig. 2.

become wider toward the narrow end of the opening, just as in the former case they became wider as the knife-edges approached one another.

The best mode for exhibiting the phenomena of diffraction, and that now generally adopted, is as follows: The rays of sunlight being reflected horizontally through an aperture into a darkened apartment, are concentrated by a combination of lenses to a very small focus. Thus the light is made to diverge from a very small circle, with the advantage of a greater concentration of light than is obtained by simply admitting the sunlight through a small aperture. The edges of the shadows of every object placed within the cone of light diverging from this focus, will exhibit the fringes above described.

By means of metal-leaf arranged upon a plate of glass, as in the accompanying diagram (fig. 2) shadows can now be thrown upon a screen, so as to exhibit at once all the most peculiar phenomena of this class.

The figures *b*, *c*, in the accompaning diagram (figs. 3 and 4) represent the appearance presented by the shadow of a wire and of a small circular disc.

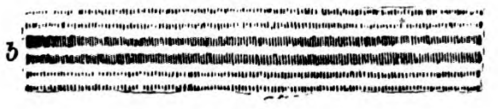


Fig. 3.

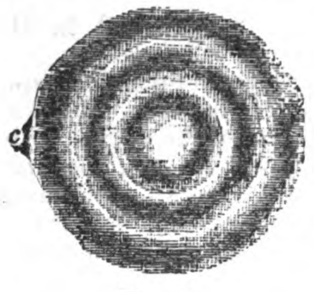


Fig. 4.

The following is a popular explanation of the phenomenon above described, as now understood. Supposing light to be propagated by undulations proceeding from a single small source or focus at A (fig. 5): let B*b* be a section of the front of a wave of this light, that is, a section of a surface passing through all the particles which are at the same instant in the same place of vibration. Let C*c* represent the front of the same wave when it has passed through the additional space BC. The vibrations of the particles in C*c* are the consequence of the vibrations previously existing along the space B*b*. But then, the motion of the particle at C is determined not alone by the previous motion of the point B, immediately opposite to it, but is affected more or less by the motions of every point in the surface B*b*. If, therefore, the vibrations over a portion of the space B*b*, be intercepted by a dark object *de*, placed there, the circumstances which determine the motion of the point C, may be totally changed; and taking into account the united effect of these vibrations, it may be found that the result, instead of light, will be darkness. Again, if a point *f* be taken directly behind the dark body *de*, though the vibrations over the space *de*, which would otherwise affect it, are stopped, it may still be affected by the vibrations in the remainder of the surface B*b*; and if the

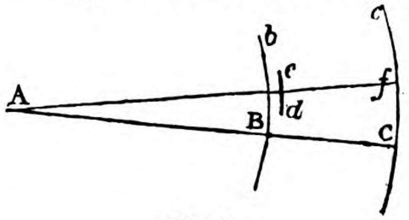


Fig. 5.

combined effects of these be such as to cause in it a sufficient vibration, there will be light at the point *f*, though it is properly within the shadow of *ed*. On the assumption of Fresnel, the explanation of all the phenomena above described is most complete and satisfactory, the fringes and dark lines being produced by the undulations alternately strengthening or destroying each other. A very beautiful experiment, devised by Fresnel for the purpose, is found to furnish a complete verification of the theory. See INTERFERENCE.

DIFFUSE, v. *dĭf-fūz′* [F. *diffus*—from L. *diffūsus*, spread abroad—from *dis*, *fūsus*, poured or spread: It. *diffuso*]: to cause to flow and spread; to send out in all directions; to circulate; to intermix uniformly and spontaneously, as one liquid with another. DIFFU′SING, imp. *-fū′zĭng*. DIFFUSED′, pp. *-fūzd′:* ADJ. dispersed; scattered. DIFFUSE. a. *dĭf-fūs′*, using too many words; not concise; widely spread; spreading irregularly. DIFFUSE′LY, ad. *-fūs′lĭ*. DIFFUSE′NESS, n. *-fūs′nĕs*, the quality of being diffuse; the use of a great number of words to express the meaning. DIFFU′SER, n. *-fū′zėr*, one who or that which. DIFFU′SIBLE, a. *-zĭ-bl*, that may be spread out or scattered. DIFFU′SIBIL′ITY, n. *zĭ-bĭl′ĭ-tĭ*, the capability of being spread. DIFFU′SION, *-fū′zhŭn* [F.—L.]: a spreading or scattering; dispersion; propagation; in *chem.*, the act or state of becoming uniformly mixed. DIFFU′SEDLY, ad. *-zĕd-lĭ*. DIFFUSED′NESS, n. *-zĕd-nĕs*. DIFFU′SIVE, a. *-fū′sĭv*, having the quality of spreading abroad; spread widely. DIFFU′SIVELY, ad. *-fū′sĭv-lĭ*. DIFFU′SIVENESS, n. *-fū′sĭv-nĕs*, the state or quality of being diffuse; expansion; prolixity.—SYN. of ‘diffuse, v.’: to scatter; disperse; expand; propagate; spread; extend; proclaim; publish; pour out; disseminate; spend; waste;—of ‘diffuse, a.’: discursive; prolix; copious; verbose.

DIFFU'SION: gradual dispersion of particles of one liquid or gas among those of another—or of the particles of a solid in a liquid holding it in solution. It is of the greatest importance in terrestrial physics, being the cause of the uniform composition of the atmosphere at all elevations, and one of the causes of the speedy dissipation of noxious gases and vapors in the open air, and of the nearly uniform saltness of the sea, etc., so necessary to animal and vegetable life.

Connected with the above cases, is the transfusion, as it has been called, which occurs when different gases or liquids are separated from each other by a porous plate or membrane. The principal experiments on this subject are those of Graham and Bunsen—see *Philosophical Transactions*, or Graham's *Chemistry*, and Bunsen's *Gasometry*.

1. *Diffusion of Gases.*—If two flasks be filled, one with hydrogen, the other with chlorine, and connected by a long tube fitted into their necks by corks—in whatever position the compound apparatus be placed it will be found that the gases mutually interpenetrate—in this particular case the color of the chlorine enables us to follow by the eye the course of the diffusion. When the mixture has attained its permanent state, each of the gases is found to be uniformly diffused through the whole containing space, precisely as it would have been had the other not been present. In fact, the presence of a second gas seems merely to affect the *time* which the first takes to distribute itself equably throughout the vessel, and in no other way to influence the final result. (Dalton, long ago, suggested the analogy of the passage of water among stones in the bed of a river.) The pressure of the mixture is the sum of the pressures corresponding to each of the gases, if separately occupying the space which they jointly fill; and the same is true of a mixture in any proportions of any number of gases, so long, at all events, as they do not act chemically upon each other.

Precisely the same is true of vapors. If, for instance, a few drops of ether be injected into an exhausted receiver, there will be an almost instantaneous conversion of a definite quantity into vapor, so that its tension shall have a certain value depending on the temperature alone. If air be present in any quantity whatever, the vaporization will proceed more slowly, but the final amount converted into vapor will be the same as in the former case. A familiar illustration of this is afforded by the dew-point, which is a temperature merely, having no connection with the height of the barometer.

Next let us take the case of a gas forced by difference of pressures from one vessel into another through a very small hole in a thin metallic plate—one of the vessels, for instance, being full of the gas, and the other connected with an air-pump continually in action. Experiment, and theory such as it is, agree in giving in this case, for the velocity with which the different gases pass through the orifice, under similar circumstances as to pressure, a result inversely proportional to the square root of the density of each gas.

Now, if, instead of the plate with the small hole, we substitute a thin layer of bladder or other membrane, or a thin disk of plaster of Paris, it appears from experiment that the results are sensibly the same. Thus, if we have the same gas at different pressures on opposite sides of such a layer or disk, the rate of passage of the gas through it, from greater to less pressure, will, for the same pressures, but different gases, vary according to the above law; and, moreover, the presence of a second gas will in no degree modify the rate of transfusion of the first. If, therefore, a glass tube, say an inch in diameter, and two or three ft. long, have a diaphragm of plaster of Paris formed near one end, and that end ground flat, so as to be perfectly closed by a glass plate, it may be filled with hydrogen by displacement, its other and lower extremity being plunged into water, and care being taken not to wet the diaphragm. If the glass plate be now removed, transfusion will take place—hydrogen passing out as if into a vacuum, and the constituent gases of air entering also as if into a vacuum. On account of the comparative lightness of hydrogen, the velocity with which it escapes will be considerably greater than that with which the others enter; so that the immediate effect will be a rise of the water in the tube. After a short time, the whole of the hydrogen escapes, and the tube will contain only air. The proportion of the volume of the latter to that of the hydrogen may be calculated from the above law—remembering that the hydrogen is practically diffusing into a vacuum all along, and the air entering by the pressure of the atmosphere in excess over that of the air in the tube. Allowing for the unavoidable errors of experiment, the verifications of these results are very satisfactory. It has been attempted to deduce these laws as consequences of the dynamical theory of gases. See a remarkable paper by Maxwell in the *Philosophical Magazine*, 1860.

Bunsen has suggested the application of the method of diffusion to the very important question in gas analysis—whether the constituents of a gas, as determined by the usual methods, are merely *mixed*, or are chemically united. It is evident that, in general, the diffusion rate of a mixture of two gases will differ from that of a compound of the same.

2. *Diffusion of Saline Matters in Solution.*—If a strong brine be placed in the bottom of a tall glass jar, pure water may be carefully introduced above it, so that no immediate mixture takes place. If the whole be allowed to stand, the salt is gradually diffused through the vessel, which, after a sufficient time, will be found to contain a brine of uniform strength. Experiments have been carefully made to determine, in such a case as the above, the distribution of the salt through the vessel at various periods *before* the permanent state has been arrived at. They have been compared with the results of the theory now to be explained, and the coincidence is very satisfactory. The theory assumes that the rate of diffusion between contiguous layers of the water in the cylinder is proportional to the excess of salt in one layer above that in the next—the co-efficient of proportion-

ality involving a special constant of diffusion for the particular salt experimented upon. This is precisely the assumption that is made about the linear conduction of heat in a homogeneous solid, or the propagation of electricity in a wire. The partial differential equation to which all these cases are reducible, $\left(C\frac{du}{dt}=\frac{d^2u}{dx^2}\right)$, was obtained, and its complete solution exhibited in various forms long ago by Fourier, in his *Théorie de la Chaleur*, one of the most remarkable mathematical investigations of last generation. See HEAT, CONDUCTION OF: ELECTRICITY, THEORY OF. It is curious to consider the heating of a metallic rod, or the solution of a few crystals of salt in a tall glass jar full of water, as problems thus directly allied to the signaling through the Atlantic cable.

Graham's method of determining the diffusion coefficient of a salt in water was simple, and yet admitted of great precision in the determinations. A number of glass bottles, cast in the same mold, had their mouths ground flat, so as to be accurately closed by a plate of glass, which—when the bottle, filled with a solution of known strength, had been carefully placed in one of a series of equal glass jars, and covered with a constant amount of water—could be slipped off without producing any considerable disturbance in the fluid. After a measured time, the glass plate was replaced, and the amount of salt which had left the bottle accurately determined.

The following are the most important of the laws thus obtained; they are quite consistent with the theory above mentioned. For solutions of the same substance, of different degrees of strength, the rate of diffusion is proportional to the strength of the solution. Different salts seem to arrange themselves in groups as regards their diffusion co-efficients, the latter having simple numerical relations to each other. Analogy of chemical composition and of crystalline form appear to be the principal elements in the arrangement of the groups. The quantity diffused increases with the temperature, and at the same rate for all salts. The presence of a second salt in the solution, or in the water into which the diffusion takes place, if not in large quantity, appears not to affect the result, supposing, of course, that no chemical action takes place. It is evident that by this process a partial separation may be effected of salts which have different rates of diffusion, and do not act chemically on each other; and it is found that in certain cases even chemical compounds, such as alum, may be partially decomposed by the same means.

3. *Diffusion of Liquids. Osmose.*—If sulphuric acid be carefully poured through a tube into the bottom of a vessel filled with water, colored by an infusion of litmus, or red cabbage, the change of color of the vegetable dye will enable us to trace the gradual diffusion of the acid in the water. Here, the process, though probably on the whole quite analogous to the case of gases, occupies more time; but the final result is, as in the former case, an almost uni

form mixture of the two fluids. But if different fluids be separated by a membrane or diaphragm, some extremely remarkable results are obtained, which were carefully examined first by Dutrochet. These have been attributed to the action of osmotic force, something of the same kind as capillary force, and probably a closely connected, if not identical form of molecular action. The theory of these actions is not yet well understood, but some explanations may be suggested from analogy.

If an inverted funnel, with a very long stem, have a bladder tied over its mouth, and, being filled to the neck with syrup of sugar, be suspended so that the bladder is entirely under the surface of water in a dish, the syrup will pass through the bladder into the water, and the water will pass through in the opposite direction, but in far greater quantity—producing the extraordinary effect of a rise in the level of the fluid in the tube, which can with precaution be made to amount to a yard or two in the course of a few days. The points of the attempted explanation of this phenomenon are somewhat as follows: The bladder has more capacity for, or will absorb more of, water than of syrup. the first effect, then, is to saturate the bladder with water, very slightly mixed with syrup. On the lower side of the bladder, water, with a small quantity of sugar in solution, is diffusing into pure, or nearly pure water, this process will be a slow one; at the upper side, water (nearly pure) is diffusing into a strong syrup. Here, then, the effect is much greater, and thus a greater quantity of water passes upward than of syrup downward. Similar effects may be produced with a vast number of other liquids. Combined with capillarity, it is believed that these experiments explain the motion of the sap in vegetables, and various other phenomena in the vegetable and animal kingdoms. See OSMOSE.

DIG, v. *dĭg* [Norm. F. *diguer*, to prick: Lith. *dygus*, sharp, pointed: Sw. *dika*, to dig a ditch—from *dike*, a ditch]: to open or turn up the earth with a spade; to excavate; to work with a spade; to search: N. a thrust; a poke. **DIG′GING**, imp. **DIGGED**, pp. *dĭgd*, also **DUG**, pt. or pp. *dŭg*. **DIG′GER**, n. one who. **DIG′GINGS**, n. plu. places where substances are obtained by digging, as *gold-diggings*. **TO DIG DOWN**, to undermine and overthrow by digging. **TO DIG IN**, to cover by digging the earth over it.

DIGAMMA, n. *dī-găm′mă* [Gr. *dis*, twice; *gamma*, a letter of the Gr. alphabet]: an obsolete letter to the anc. Gr. alphabet, nearly equivalent in form and sound to the English *F*—the sound a little nearer *V*. In some of the earlier Greek dialects the old *γ* was a kind of aspirate, which, from its form, like one capital *Γ* over another, was called digamma, and written . The Pelasgians carried this aspirate into Italy, where it remained in Latin as a real consonant, in such words as *vinum*, *ovum*, from the Greek F*οῖνος*, F*ῷον*. The digamma had disappeared as a character from the Greek language before the days of Homer.

DIGASTRIC, a. *dī-găs′trĭk* [Gr. *dis*, twice; *gastēr*, the belly]: having a double belly—applied to a muscle of the lower jaw.

DIGBY, *dĭg′bĭ:* small seaport of Nova Scotia on the Bay of Fundy, reputed for its curing of a variety of small herrings or pilchards, which are smoked and dried for export; they have a high flavor, and are known in trade as Digbies. Pop. (1871) 1,570.

DIG′BY, Sir Kenelme: 1603–65; son of Sir Everard Digby, one of the Gunpowder Plot conspirators, who suffered death three years after his son was born. He was brought up in the Prot. faith, and at the age of 15 was entered at Gloucester Hall, Oxford. After leaving the university, where he had acquired the reputation of great ability, he spent two years in continental travel. He returned to England 1623, and was knighted in Lord Montague's House. Under Charles I., he was a gentleman of the bedchamber, and held several public offices. In 1628, he equipped a squadron at his own expense, and sailed first against the Algerines, and subsequently against the Venetians. In 1632, on the death of Dr. Allen, of Gloucester Hall, D. inherited his collection of books and manuscripts. In 1636, when in France, he was converted to the Rom. Cath. faith. He returned to England 1638, and on the breaking out of the civil war, he was imprisoned as a royalist in the Winchester House, but in 1643 he was allowed to retire to France. At Paris, he was received with favor by the court, and made the acquaintance of Descartes. After Charles I. had fallen, D. returned to England, but the parliament forbade him the kingdom, under penalty of death. Retiring to the continent, he travelled in France and Italy; but in 1655, he was again in England, and was in frequent attendance at the court of the Protector. He went again to France, and busied himself with the preparation of philosophical papers. He returned to England 1661, and died there. D. married a daughter of Sir Edward Stanley of Tongue Castle, in Shropshire, by whom he had one son.

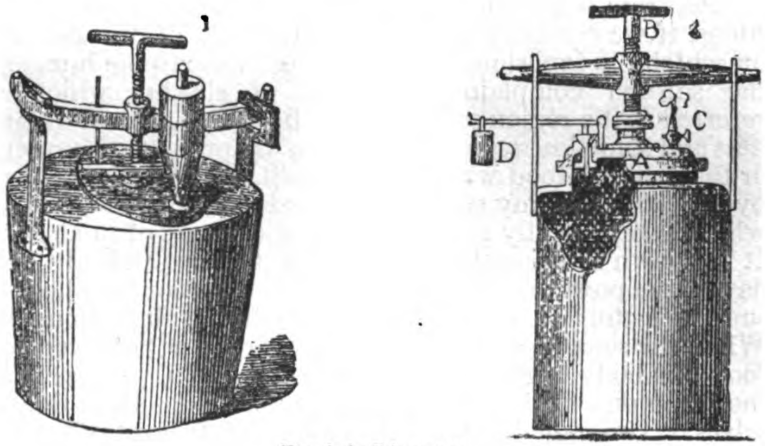
His works are numerous, and on a great variety of subjects, comprising *A Conference with a Lady about the Choice of a Religion* (Par. 1638), *Observations on Spenser's Fairy Queen* (Lond. 1644), *A Treatise on the Soul, proving its Immortality* (Par. 1644), *Of the Cure of Wounds by the Powder of Sympathy* (Lond. 1658), and *Discourse on Vegetation* (Lond. 1661, etc.). *The Private Memoirs of Sir K. Digby*, etc., *written by Himself*, were published in London 1827. D.'s library, which was removed to France when the civil war broke out in England, became, on his death, the property of the French king.

DIGENESIS, n. *dĭ-jĕn′ĕ-sĭs* [Gr. *dis*, double; *genesis*, birth]: the same as parthenogenesis (q.v.).

DIGEST, v. *dĭ-jĕst′* [F. *digeste*, a collection of decisions —from L. *digestus*, disposed, set in order—from *dis*, *gestus*, carried on, performed: It. *digesto*]: to distribute under suitable heads or titles, as laws; to arrange in convenient order, or with due method; to think over and arrange in the mind;

to dissolve or reduce the food in the stomach; to bear with patience; in *chem.*, to prepare by heat. DIGEST, n. *dī'jĕst*, any compilation, abridgment, or summary of laws arranged under proper heads or titles: see CODE: the name is often given to the Pandects (q.v.) of the civil or Roman law, because they contained ' Legalia præcepta excellenter digesta.' DIGESTING, imp. *dĭ-jĕs'tĭng*. DIGES'TED, pp. DIGES'TER, n. one who; that which aids digestion; a close vessel for boiling water at a great pressure, and therefore at a very high temperature, used for boiling gelatine out of bones, etc.; a cooking vessel. DIGESTION, n. *dĭ-jĕst'yŭn* [F.—L.]: the changing of the food in the stomach into a substance fitted for circulation and nourishment; in *chem.*, the slow action of a solvent; applied to solids in a liquid exposed to gentle heat. DIGES'TIBLE, n. *-tĭ bl*, easy of digestion. DIGES'TIBILITY, n. *-bĭl'ĭ-tĭ*. DIGES'TIVE, a. *-tĭv*, having the power to cause or promote digestion; promoting suppuration of a sore.—SYN. of ' digest, n.': abridgment; compendium; epitome; abstract; summary; synopsis; draught.

DIGES'TER, PAPIN'S: strong boiler with a closely fitting cover, in which articles of food may be boiled at a higher temperature than 212° F.; the invention of Papin. A common form is the *Autoclave*, fig. 1, where the lid can be turned round under clamps or ears, and thus be rendered steam-tight. Another form is given in fig. 2, where a portion of the side is removed, to exhibit the interior.



Papin's Digester.

The lid A is fastened down by a screw B, and the steam generated in the boiler is allowed to escape at a stop-cock C, or by raising the weighted valve D. The increased pressure to which the contents of the boiler are exposed, causes the boiling-point of the water to rise to 400° F., and occasionally higher. The digester is of great value as a means of preparing soups of various kinds, and especially in the extraction of gelatine from bones.

DIGES'TION: function of special bodily organs; one of the chief of those organic functions directly concerned in maintaining life, inasmuch as it is that through which the animal is enabled to receive aliment, and to prepare or modify it for being assimilated to, and appropriated by, the various organs of the body, or, in other words, for being converted into blood.

The general expression, 'function of digestion,' includes several minor or subordinate processes. According to Milne Edwards, the acts of the digestive function may be classed as follows: 1. There is the Prehension of the Food; 2. Its Mastication; 3. Its Insalivation; 4 Its Deglutition; 5. Its Chymification or Stomachal Digestion; 6. Its Chylification or Intestinal Digestion; 7. Defecation; and 8. The Absorption of the Chyle.

Before examining these acts in succession, and the mechanism by which each is effected, we must have clear conceptions regarding the classification of food, the quantity of food, and other allied subjects (see DIET: FOOD); and we should likewise have some knowledge of the causes of those sensations which we call *hunger* and *thirst*, which are, or ought to be, our natural guides regarding the periods for taking food, and the quantity to be taken. The immediate cause of ordinary hunger cannot be explained; but that it is due to some peculiar condition of the gastric mucous membrane, seems probable from the fact, that the sensation continues after division of the pneumogastric nerves, from which the stomach mainly derives its nervous fibres, if we correctly interpret the feelings of the animals on which the experiments were made. In extreme hunger, the sufferer complains of a sense of sinking, which is referred to the region of the stomach, while general faintness and sometimes considerable pain are present. Hunger, or the want of food which occasions it, may be diminished by rest, sleep, or any cause that retards the general change which is perpetually going on in all the tissues of the body. It is shown in the article DIET, that tobacco and alcohol have some power of limiting the disintegration of the tissues, and thus of keeping off or diminishing hunger. When the sensations of extreme hunger are not relieved by food, the body begins to feed upon its own tissues, and the symptoms of Starvation (q.v.) begin to manifest themselves. The period at which death occurs from abstinence, varies greatly in different animals—young animals always dying sooner than older ones. In man, total privation of food usually causes death in about a week; but if a little drink be allowed, life is considerably prolonged.

Thirst is dependent upon a peculiar condition (probably undue dryness) of the mucous membrane of the upper part of the digestive tube. The thirst in febrile affections is due probably to the morbid state of the blood.

Different acts of the digestive function.—1. In the act of prehension, man and many of the lower animals (monkeys, squirrels, etc.) employ the hands or anterior extremities and mouth; the lips and anterior teeth, and, to a certain extent, the tongue also being used. In the lower animals, the modes of prehension are various. Some (like the giraffe) twist the tongue around the leaves and young branches of trees; others (the ant-eaters) have a remarkably long tongue, covered with a viscid secretion, and by thrusting this organ into ant-hills, etc., secure their prey; and in the chameleon among reptiles, and the woodpecker among birds, the tongue seems specially developed for prehensile purposes. In the elephant, this act is accomplished by the prolongation of the nostrils into the organ popularly known as the trunk. In other mammals (the Ruminants and Solipeds), the large pendulous lips are the organs employed. In birds, the bill (a modification of the lips) is always the prehensile organ of that class.

The prehension of fluids is effected in two ways: sometimes the liquid is poured into the mouth, and is allowed to fall into it by its own weight; in other cases, the tongue is used after the fashion of a piston, being drawn within the mouth so as to exhaust the anterior part of that cavity, and fluids are thus forced to enter by atmospheric pressure.

2. Mastication is effected in the cavity of the mouth by means of the teeth. This cavity is bounded superiorly by the palate or roof of the mouth, and in other directions by the cheeks, lips, and tongue. Projecting into its interior, above and below, is an arched series of teeth, which are firmly fixed by roots into corresponding sockets in the upper and lower jawbones. The upper jaw (and consequently the dental arch imbedded in it) is immovable, or movable only with the entire head; but the lower jaw, with its teeth, is capable of moving upward, downward, backward, forward, and laterally, by means of the powerful muscles of mastication. It is by the varied movements of the lower teeth against the upper, through the action of these muscles, that the food is broken down or masticated. See TEETH: DENTITION.

The operation of mastication is very important, since the more the food is broken down the more easily will it mix with the saliva and other fluids which participate in the digestive process.

3. Insalivation is effected by the admixture of the secretions of the three pairs of salivary glands (the parotids, the submaxillaries, and the sublinguals) and of the buccal mucus with the triturated food: see GLAND. The common saliva, formed by the combined secretion of these various secreting organs, is a colorless, turbid, viscid, inodorous, and tasteless fluid, which, after standing for some time, deposits a layer of pavement epithelium (see EPITHELIUM) and mucus corpuscles. In the normal state, its reaction is alkaline, but the degree of alkalinity varies, and is greatest during and after meals. Saliva does not contain more than five or six parts of solid constituents to 995 or 994 parts of water, the most important ingredients being an organic matter termed *ptyaline*, and sulphocyanide of potassium, neither of which substances occur in any other solid or fluid of the body. The daily quantity of saliva secreted by an adult man is estimated at about 48 ounces, but determinations of this kind must be regarded only as approximations to the truth, since the activity of the salivary glands is dependent upon various influences

and condition. Thus movement of the lower jaw, as in masticating, speaking, or singing, increases the secretion; as also do acrid and aromatic substances, and dry hard food; while the use of moist and soft food is accompanied by a scanty secretion.

The uses of saliva in reference to digestion are partly mechanical and partly chemical. The mechanical uses are apparent: the moistening of the dry food by the saliva serves the double purpose of adapting it for deglutition and of separating the particles, and thus allowing them to be more freely acted on by the other digestive fluids; moreover, from its viscidity, it lubricates the bolus of food, and thus facilitates deglutition; and it is probably also subservient to the sense of taste. The great chemical use of the saliva is to convert the amylaceous (or starchy) portion of the food into glycose or grape sugar, and thus to promote its absorption.

4. Deglutition is the act by which the food is transferred from the mouth to the stomach. The pharynx, or cavity into which the mouth leads, takes only a slight part in the digestive process: between it and the mouth is the pendulous or soft palate, a movable muscular partition that separates the two cavities during mastication. As soon, however, as the latter act is accomplished, and the bolus is pressed backward by the tongue, the soft palate is drawn upward and backward, so as to permit the passage of the food into the pharynx. The bolus or pellet of food having arrived near the œsophagus or gullet (which is continuous inferiorly and posteriorly with the pharynx), is driven into it by the action of certain muscles, which almost surround the pharynx, and are termed its *constrictor* muscles. All voluntary action ceases as soon as the food is pressed backward by the tongue into the pharynx. It is impossible to recall the pellet, and it is necessarily carried on (without even our cognizance) into the stomach. On receiving the food forced into its upper extremity by the action of the constrictor muscles of the pharynx, the œsophagus is dilated (for it usually lies in a collapsed state, with its walls in contact, or nearly so); this contact of the pellet with its mucous membrane causes its muscular walls to contract, and the food is thus driven, by a series of these contractions, into the stomach. The act of deglutition is now completed.

5. Stomachal digestion or chymification is the next process to be considered. The whole of the Alimentary Canal (q.v.), (fig. 1) below the Diaphragm (q.v.), or great mucular partition which separates the cavity of the chest from that of the abdomen or belly, possesses the following points in common, in relation to structure: The stomach, the small intestine, and the large intestine, are all lined by mucous membrane, have a muscular coat, consisting of two sets of distinct fibres—namely, circular fibres which surround the tube or viscus after the manner of a series of rings, and longitudinal fibres running in the same direction as the intestine itself—and are invested with a serous membrane, the peritoneum (see SEROUS MEMBRANES), which at the same time retains the viscera in their proper position, and permits their necessary movements.

DIGESTION.

The human stomach is an elongated curved pouch, lying almost immediately below the diaphragm, and having the form of a bagpipe. It is very dilatable and contractile, and its function is to retain the food until it is duly acted upon and dissolved by the gastric juice, which is secreted by glands lying in its inner or mucous coat, and then to transmit it, in a semi-fluid or pulpy state, into the duodenum. Its average capacity is about five pints. The parts of it which have received special names are the greater curvature (fig 1) *b*, the lesser curvature, upon its upper border, and the cardiac, *c*, and pyloric, *d*, extremities.

The mucous membrane, or lining coat of the stomach, is thick and soft, and lies in irregular folds, in consequence of the contraction of the muscular coat, unless when the organ is distended with food. On opening the stomach, and stretching it so as to remove the appearance of folds, we perceive even with the naked eye, but better with a lens, numerous irregular pits or depressions, irregular in shape, and averaging about $\frac{1}{120}$th of an inch in diameter. To see them properly, the mucus with which they are filled must be washed out (fig. 2, A). These pits are so shallow as not to dip into the mucous membrane to a greater extent than $\frac{1}{6}$th or $\frac{1}{8}$th of the thickness. The rest of the thickness is chiefly made up of minute tubes, running parallel to one another, and vertically to the surface of the stomach (fig. 2, B). These are the gastric tubes or glands which secrete the gastric juice from the blood in the capillaries which abound in the mucous membrane. They pass in twos, threes, or fours from the bottom of each pit, and usually subdivide into several tubes, which, after running a more or less tortuous course, terminate in blind or closed extremities. These tubes are filled with epithelial cells, whose contents are composed of granules, with which oil-globules are often mixed, and each tube is invested with capillaries, which usually run in the direction of its long axis. In the pyloric or duodenal end of the stomach, these tubes (at least

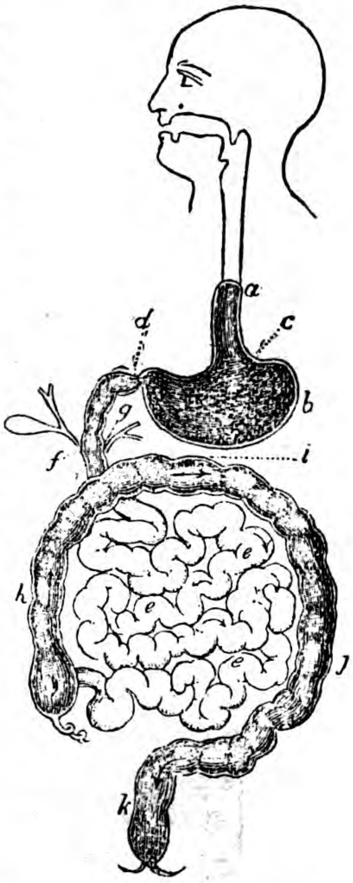


Fig. 1.
Human Alimentary Canal.
a, esophagus; *b*, stomach; *c*, cardiac orifice; *d*, pylorus; *e*, small intestine; *f*, biliary duct; *g*, pancreatic duct; *h*, ascending colon; *i*, transverse colon; *j*, descending colon; *k*, rectum.

in the dog and several other animals whose stomachs have been carefully examined in a perfectly fresh state) are considerably wider than those which we have described, and differ from them also in other respects; and hence some physiologists believe that while they collectively secrete the gastric juice, one set may secrete the acid fluid and the organic matter termed pepsine, and the other mucus; the free acid and pepsine are, as we shall shortly see, the two essential constituents of the gastric juice.

When food is introduced into the stomach, three special phenomena are induced in that viscus: 1. There are certain movements induced which are dependent on its muscular coat; 2. The mucous membrane is altered in appearance; and 3. There is the secretion of the gastric juice. Each of these phenomena requires brief notice.

On killing an animal while the act of digestion is going on, and at once laying open its abdomen, we find that the stomach is in a contracted state, firmly embracing its contents, and with both its orifices so closed as to prevent the escape of the food, this contraction being due to the stimulation of the muscular coat by the food. If we examine the movements of the stomach during digestion which we can do either by exposing the stomach of a living animal, or by sending a magneto-electric current through this organ in an animal just killed, we perceive that, in the cardiac half or two-thirds, the movements are extremely slow, the muscular coat apparently contracting on the food, and

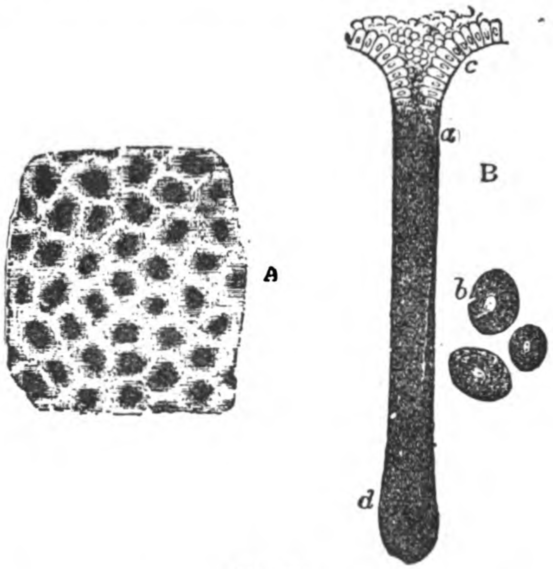


Fig. 2.

A. inner surface of the stomach, showing the cells after the mucus has been washed out, magnified 25 diameters. B. stomach-tube from the middle of the human stomach, magnified about 150 diameters: *a*, wall of the tube, lined with large oval nucleated cells; *b*, the same cells isolated; *c*, nucleated cells of collumnar epithelium, occupying the upper parts of the tubes; *d*, blind extremity of the tubes.

progressively sending it toward the pylorus; while in the pyloric end of the stomach the movements are more energetic and rapid, resembling the peristaltic or vermicular movement, which we shall presently describe as occurring in the intestinal canal. When the tranverse constriction has reached the firmly shut pylorus, a relaxation lasting about a minute ensues, followed by a repetition of the circular contractions. The movements which these contractions impress upon the food are described by Dr. Beaumont in the following terms: 'The food entering the cardiac end of the stomach, *c*, turns to the left, descends into the splenic extremity, *s*, and follows the great curvature toward the pyloric end, *d*. It then returns in the course of the smaller curvature, and makes its appearance again at the cardiac aperture in its descent into the great curvature to perform similar revolutions. These revolutions are effected in from one to three minutes.' This account given, by Dr. Beaumont, is based on the observations which he made in the stomach of Alexis St. Martin, a Canadian, with a fistulous opening into the stomach (referred to in the article DIET). Dr. Brinton, however, adopts a modified view, which is probably the correct one. He supposes that the semi-fluid food entering at *c* (fig. 3), the cardiac orifice, goes in the directions marked *a*, partly along the greater, and partly along the lesser curvature; and that these two currents of food meet at the closed pylorus, when they are both reflected into the direction *b*, forming a central or axial current, occupying the real axis of the stomach which unites the two apertures. The mutual interference of these currents at their borders causes a uniform admixture of the various substances composing them, while the reflection of the upper and lower currents into one another insures an equal contact of all the mass with the secreting surface of the mucous membrane.

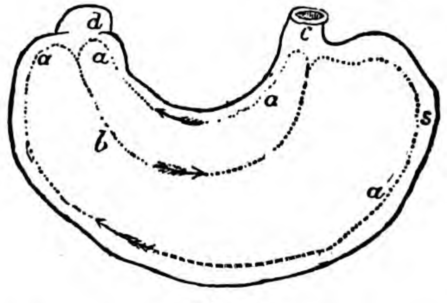


Fig. 3.

Diagram to show the general direction of movement impressed on the semi-fluid food in the stomach.

***aa*, the hemispherical or surface current, carrying the semi-fluid food toward the closed pylorus, where it is reflected into *b*, the central current, which unites the cardiac (*c*) and pyloric (*d*) openings.**

The changes in the mucous membrane are mainly the following: The inner surface of the healthy fasting stomach is of a paler pink tint than after the introduction of food, and while in the latter case the reaction of the moisture on the surface is very acid, in the former it is neutral, or even alkaline. Dr. Beaumont found (in the case of Alexis St. Martin) that, on the introduction of food into the stomach, the vessels of the mucous membrane became more injected, and that its color became changed from a pale pink to a deep red. A pure colorless and slightly viscid fluid, with a well-marked acid reaction, was then observed to distil from the surface of the membrane, and to collect in drops, which trickled down the walls, and mixed with the food.

That the *gastric juice*, which is the term applied to the acid fluid which Dr. Beaumont saw exuding from the mucous membrane, and which is secreted or formed in the gastric tubes already described, is capable of exerting a solvent action on food, is proved by numerous experiments. It was first ascertained by Reaumur (1752), who obtained some of this fluid by causing animals to swallow sponges with a string attached, by which he could withdraw them. He thus showed that alimentary substances out of the body were altered by this fluid in the same manner as in the stomach, and disproved the favorite theory of that period, which ascribed all the changes which the food underwent in the stomach to a species of trituration. The subject of *artificial digestion*, or digestion out of the body, has, since that period, been carefully investigated by many observers, and there is now no doubt that the changes which the food undergoes in the stomach are essentially chemical, and not mechanical.

Two years before Beaumont's experiments, Dr. Prout had ascertained not only that an acid fluid is secreted by the gastric mucous membrane of rabbits, hares, horses, dogs, etc., during digestion, but that the acid is the muriatic or hydrochloric acid, and it was supposed that the solvent action of the gastric juice was due to this source. But experiments showed that the solvent action is not due simply to the acid of the gastric juice, and that the latter must contain some other ingredient which, either alone or in combination with the acid, can exercise this power. It was then discovered that the addition of a portion of the gastric mucous membrane to water acidified with hydrochloric acid produced a perfect digestive fluid, due attention being paid to the temperature, which should be kept at about 100°, or about the normal temperature of the interior of the animal body. Later observations showed that we can obtain from the gastric mucous membrane the special organic matter on which its digestive power depends, and to this substance the name of *pepsine* has been given. The two essential elements of the gastric juice are then: 1. A free acid, which in some cases seems to be hydrochloric alone, and in others a mixture of hydrochloric and lactic acids; and 2. An organic matter, which is found on analysis to be highly nitrogenous, and to be allied to the albuminates, and which we term pepsine. The best analysis of human gastric juice is that made by Schmidt of Dorpat, who, 1853, had an excellent and rare opportunity of examining it in the case of an Esthonian peasant, Catharine Kütt, aged 35 years, and weighing about 118 lbs., in whom there had existed for three years a gastric fistula or opening, three or four lines in diameter, under the left breast, between the cartilages of the ninth and tenth ribs. The introduction of dry pease and a little water into the stomach, through the opening, occasioned (even in the morning, on an empty stomach) the secretion of from five to seven ounces of a clear limpid fluid with an acid reaction, which, however, was much less strong than Schmidt had observed in previous experiments on the gastric juice of dogs and sheep, in which he had artificially established similar fistulous openings. The following table gives the mean of two analyses of the gastric juice of Catharine Kütt, with corresponding mean results of the same fluid in the sheep, a purely herbivorous animal, and in the dog, a purely carnivorous animal.

	Human Gastric Juice.	Sheep's Gastric Juice.	Dogs' Gastric Juice.
Water, . .	994·40	986·15	971·17
Solid constituents,	5·60	13·85	28·83
Pepsin, . .	3·20	4.20	17·51
Hydrochloric acid,	0·20	1·56	2·70
Chlorides of sodium, etc.,	2·08	6·00	5·88
Phosphates, . .	0·12	2·09	2·74

The only impurity that could affect these analyses, is the saliva that possibly might have been swallowed.

The quantity of the gastric juice secreted in 24 hours was determined by Bidder and Schmidt (*Die Verdauungs säfte,* etc.) in the sheep to be one-eighth, and in the dog one-tenth of the weight of the body. If the latter ratio were true for men, a man of ten stone weight would secrete about 14 lbs. of this fluid daily. In the case of Catharine Kütt, the mean daily quantity amounted to no less than 31 lbs., or to more than a fourth part of the weight of her body. On this calculation, a man of ten stone would daily secrete 37 lbs. of gastric juice.

The uses of this fluid in reference to digestion are evident. It serves not only to dissolve, but also to modify the nitrogenous elements of the food (such as albumen, fibrine, caseine, and, in short, all animal food except fat, and the blood-forming portion of vegetable food), converting them into new substances, termed *peptones,* which, though they coincide in their chemical composition, and in many of their physical properties, with the substances from which they are derived, differ essentially from them in their more ready solubility in water, and in various chemical relations. Thus, albumen is converted by the gastric juice into albumen-peptone, fibrine into fibrine-peptone, etc. According to the investigations of Meissner, the albuminates are simultaneously decomposed or broken up into peptones and substances which he terms *parapeptones,* which latter are not further changed by the action of the gastric juice, but are converted into peptones by the action of the pancreatic juice, with which they come in contact in the duodenum.

All the best observers agree that the gastric juice exerts no apparent action on the non-nitrogenous articles of food—namely, the fats and the carbo-hydrates (sugar, starch, etc.); as, however, the fats exert a favorable influence on the digestion of nitrogenous matters, it is probable that they undergo some slight, though not appreciable modification. Gelatine and gelatinous tissues are, so far as is known, the only nitrogenous articles of food not converted into peptones and parapeptones by the action of the gastric juice.

Although the main object of the gastric juice is to dissolve the albuminates, etc. (e.g., the contents of the egg, flesh, cheese, etc.), it appears from the experiments of Lehmann, Schmidt, and others, that it cannot dissolve the quantity necessary for the due nutrition of the organism. According to Lehmann, gastric juice can dissolve only one-twentieth of its weight of coagulated albumen, while Schmidt makes the quantity as low as one forty-fifth. Now, since a dog secretes about one-tenth of its weight of gastric juice daily, it would be able—even taking Lehmann's estimate, which is more than twice as high as Schmidt's—to digest only 5 parts of dry or coagulated albumen for every 1,000 parts of its weight; but a dog, in order to keep in condition on an exclusive flesh diet—and this is its natural food—should take 50 parts of flesh, containing 10 parts of dry albuminates, for every 1,000 parts of its weight. Hence its gastric juice suffices for the digestion of only half the albuminates necessary for nutrition—a result in accordance with the observed fact, that a considerable portion of the albuminates enters the duodenum in an undissolved state, and which will be explained when we consider the part which the intestinal juice—fluid secreted by the various glands lying in the mucous membrane of the small intestine—takes in the digestive process. On comparing the experiments made on dogs with those made on Catharine Kütt, it appears that in the human subject the gastric digestion of the albuminates is much more imperfect than even in the dog.

The process of gastric digestion is slow. According to Beaumont's researches on Alexis St. Martin, the mean time required for the digestion of ordinary animal food, such as butcher's meat, fowl, and game, was from two hours and three-quarters to four hours.

The next point to be considered is: What becomes of the matters that are thoroughly dissolved in the stomach? Are they absorbed, without passing further down the canal? or do they pass through the pyloric valve into the duodenum, and are they finally taken up by the lacteals? Two of the highest authorities in physiological chemistry, Frerichs and Donders, maintain that the absorption of the peptones commences in the stomach; but the view generally adopted is, that the albuminates, etc., converted into peptones, are for the most part taken up by the lacteals. The rapidity with which aqueous solutions of iodide of potassium, the alkaline carbonates, lactates, citrates, etc., pass into the blood, and thence into the urine, saliva, etc., shows that the absorption of fluids must take place very shortly after they are swallowed, and there is little doubt that the blood-vessels (capillaries) of the stomach constitute the principal channel through which they pass out of the intestinal tract into the blood. As the veins of the stomach, formed by the union of these capillaries, contribute to form the portal vein (see Circulation, Organs of), the absorbed

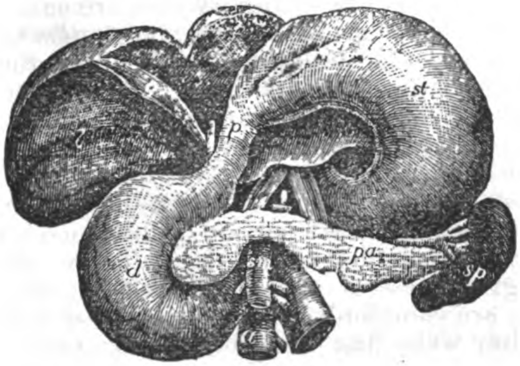


Fig. 4.

The under surface of the stomach and liver, which are raised to show the duodenum and pancreas.

st, stomach; *p*, its pyloric end; *l*, liver; *g*, gall-bladder; **d**, duodenum, extending from the pyloric end of the stomach to the front, where the superior mesenteric artery (*sm*) crosses the intestines; **pa**, pancreas; **sp**, spleen; *a*, abdominal aorta.

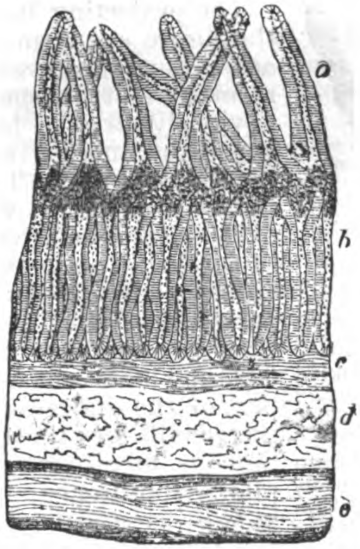


Fig. 5.

Vertical and longitudinal section of the small intestine in the lower part of the jejunum, showing the general arrangement of its coats.

a, villi; *b*, intestinal tubes or follicles of Lieberkuhn; *c*, submucous areolar tissue; *d*, circular muscular fibres; *e*, longitudinal muscular fibres.

matters pass directly to the liver, and probably stimulate it to increased secretion (fig. 4).

6. We must now follow the progress of the semifluid mass known as the *chyme*, from the stomach into the small intestine, and notice the changes which are collectively impressed upon it, and are known as *chylification* or intestinal digestion. But it is desirable first to notice the intestinal mucous membrane, with its various glands, etc., and the changes which take place in it during digestion.

The mucous membrane of the small intestine resembles that of the stomach so far as it is of considerable thickness, and consists in a great measure of laterally grouped tubes: see fig. 5, which exhibits a section of the mucous membrane of the small intestine in the dog. These tubes, which form the great mass of the middle portion of the section marked *b*, are commonly called the *follicles of Lieberkuhn*, though they were first described by Brunner. They are straight, nearly uniform in diameter through their entire length, and are parallel to one another, and perpendicular to the inner surface of the small intestine on which they open. Nothing is known of the exact nature of their secretion; but in association with the secretions of other glands, they combine to yield the intestinal juice whose characters and uses will shortly come under our notice.

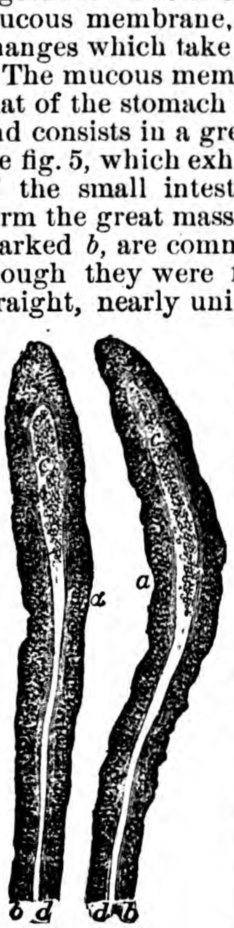


Fig. 6.

Two villi, denuded of epithelium, with the lacteal vessels in their interior.

a, limitary membrane of the villus; *b*, basis of the same; *c*, dilated blind extremity of the central lacteal; *d*, trunk of the same.

The projecting bodies marked *a* in the figure are termed the *villi;* they are minute processes of the mucous membrane of the small intestine, and obviously serve to increase to a great extent the amount of absorbing mucous membrane. They first appear in the duodenum, where they seem to develop themselves as elongations of the partitions between the cells or pits into which the tubes open. Comparatively scanty in number at first, they become very numerous (covering the whole surface) in the further part of the duodenum and the rest of the small intestines, giving to the mucous membrane a velvet-like or pilous appearance; they finally cease at the ileo-cæcal valve, which forms the boundary between the small and large intestine. In man, they are conical in shape, and measure from one forty-fifth to one-sixtieth of an inch in length. They vary much in shape and size in the lower mammals and in birds. In carnivorous animals, as the dog, they are longer and more filiform than in man.

The structure of a villus (fig. 6) is somewhat complicated, but should be considered, because without some accurate knowledge on this point, no one can understand how most of the essential elements of food (the albuminates and fatty matters) make their way from the intestine to the blood. Each villus is provided with an abundant set of capillaries, which doubtless absorb fluid matters, which thus find their way directly from the bowels into the blood (fig. 7). A single artery enters its base, and passing up its centre, divides into a capillary plexus, which almost surrounds the villus immediately beneath the mucous membrane. From these arise small veins, which usually pass out of the villus in two, three, or more trunks, and contribute to form the portal vein: see CIRCULATION.

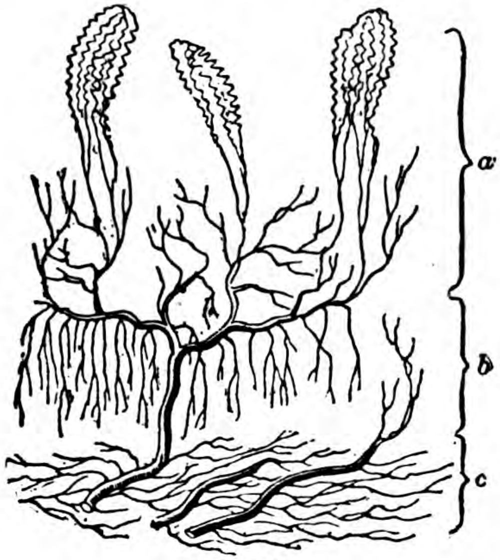


Fig. 7.

Vertical section of the coats of the small intestine, showing the capillaries and the beginnings of the portal vein. The arteries are not seen, not having been penetrated by the injection which has been thrown into the portal vein.

***a*, vessels of the villi; *b*, those of the tubes or follicles of Lieberkuhn; *c*, those of the muscular coat.**

The villus also contains in its interior one or more *lacteals*, vessels with club-shaped closed extremities, which absorb the chyle from the intestine. Their milk-white appearance, when they are filled with chyle, suggests the origin of their name. The tissue which occupies the cavity of the villus, in which the lacteals are imbedded, and which supports the capillary plexus, is in great measure made up of nuclei and granules, except at the free extremity, where a vesicular structure, resembling very minute fat globules, is apparent.

There is abundant evidence that the function of the villi is connected with absorption, and mainly with the absorption of chyle. 1. The villi exist only in the small intestine, where chiefly the absorption of food goes on. 2. They are most developed in that part of the intestine where chyle is first formed. 3. They are turgid, enlarged, and opaque during the process of chylification, and small and shrunken in animals that have been kept fasting for some time before death.

In addition to the villi, the mucous membrane of the small intestine presents numerous transverse folds, termed the *valvulæ conniventes*, from their valvular form and from their movements under water resembling the winking motion of the eyelids (fig. 8). Each fold passes round three-fourths or more of the gut; and in the lower part of the duodenum, and in the jejunum (the parts in which they are most fully developed), they are often more than half an inch in depth; further on, they diminish in depth, length, and number, and in the lowest part of the ileum they can scarcely be traced. Their object clearly is to increase the extent of the absorbent mucous membrane.

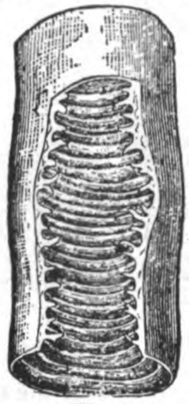


Fig. 8.
Small intestine distended and hardened by alcohol, and laid open to show the valvulæ conniventes.

In addition to Lieberkuhn's follicles or tubes, which exist in the whole of the small intestine, there are other glandular or secreting structures, imbedded in the submucous tissue of certain portions of the intestinal tract. These are: 1. Brunner's glands, which occur only in the duodenum; 2. Solitary glands, which seem to occur in all parts of the intestine, both small and large; and 3. Peyer's glands, which are usually confined to the ileum.

Brunner's glands are most abundant at the pyloric end of the duodenum. In structure, they resemble the pancreas, their ultimate elements being bunches of vesicles, from which minute ducts arise, which coalesce and form larger ducts, through which the secretion is poured into the duodenum. It is believed that they secrete a fluid similar to the pancreatic juice. The *solitary glands* occur in all parts of the intestine, but are perhaps more numerous in the jejunum than elsewhere. Each gland is a simple membranous flask-shaped vesicle, the neck corresponding to the surface of the intestine, while the rounded base lies in the submucous tissue. The neck presents no opening, and how the contents, which consist of nuclei and granular particles, are discharged into the intestine, is not known. As we never see them larger than a mustard-seed, we may presume that, on attaining that size, they burst. *Peyer's glands* (fig. 9) are apparently mere aggregations of solitary glands, forming oval patches in the ileum. These patches vary in size and number, being largest toward the cæcum, where their long diameter sometimes measures three or four inches, and smallest towards the jejunum; while their number varies from 15 to 20, or even more. Nothing certain is known regarding the uses of these solitary or aggregated glands; but as they are largest during the digestive process, we must infer that they are in some way connected with that function. Possibly, the peculiar odor of the fæces may be due to their secretion. In typhoid or enteric fever, and in phthisis, these glands become ulcerated, which probably occasions the diarrhea so common in these diseases.

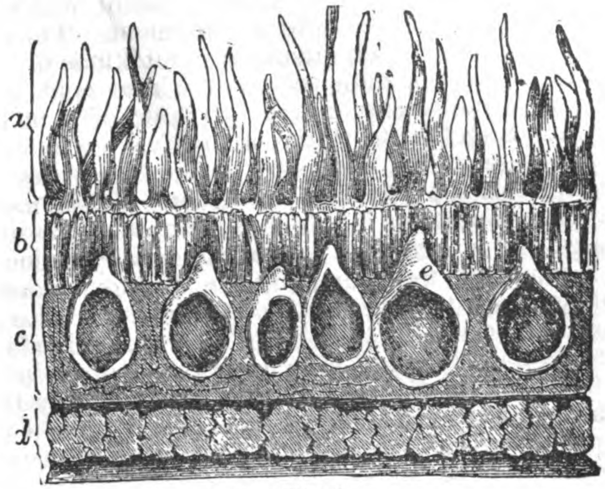


Fig. 9.

Vertical section through a patch of Peyer's glands in the dog.

***a*, villi; *b*, tubes of Lieberkuhn; *c*, submucous tissue, with the glands of Peyer imbedded in it; *d*, muscular and peritoneal coats; *e*, apex of one of the glands projecting among the tubes.**

Brunner's glands are much more developed in the herbivora than in the carnivora; Peyer's are most developed in the carnivora.

From this glance at the structure of the mucous and submucous coat of the small intestines, we proceed to notice the chief uses of the muscular coat of the intestine. This coat consists of two layers of muscular fibres—namely, circular and longitudinal fibres, of which the former lie next to the submucous coat. The peristaltic or vermicular action by which the substances which enter into the duodenum from the stomach are moved onward, is due to this muscular coat. A person who has once seen the abdomen of an animal laid open immediately after death, will have a better idea of the nature of this movement than can be afforded by any description. It commences about the pyloric third of the stomach, whence successive wave-like movements are propagated through the entire length of the intestinal canal. It is the rapid succession of these alternate contractions and relaxations that impels the intestinal contents onward, and occasione those movements which, from their resemblance to the writhings of a worm, have been termed *vermicular*. It is very probable that the rapidity of this movement varies in different individuals—those persons, for example, whose bowels act twice daily having a more rapid vermicular motion than those in whom the act of defæcation occurs only once in the twenty-four hours.

We have now to consider the effects produced on the chyme by the different fluids with which it becomes mixed in the small intestine. These fluids are: 1. The bile; 2. The pancreatic juice; and, 3. The intestinal juice.

The bile (see BILE) is a faintly alkaline or neutral fluid, containing two essential constituents, one of which is of a resinous nature, while the other is a pigment. The resinous constituent is not precisely identical in all kinds of bile, but it generally consists of a soda-salt whose acid is either glyco-cholic or tauro-cholic acid (q.v.), or of a mixture of these salts. Strecker, to whom mainly we are indebted for our knowledge of the chemistry of the bile, states that in most mammals the resinous constituent differs merely in the varying proportions in which the taurocholates and glycocholates are intermixed, the former usually preponderating. According to Lehmann, the resinous constituent amounts to at least 75 per cent. of the solid residue. The bile-pigment occurs in the bile of different animals under two forms—namely, as a brown and as a green pigment, the latter probably differing from the former only in being more highly oxidized. There has never been a case in which physiologists have had an opportunity of directly observing the quantity of bile that is secreted by the human subject, and all our information on this subject is derived from observations on animals, in which the *ductus choledochus communis* (see LIVER) has been tied, and a fistulous opening established into the gall-bladder. If the same proportion of bile to bodily weight holds good in man as in the dog, a man weighing ten stone would secrete daily about five pounds of bile. All observers agree, that the amount of the biliary secretion varies directly with the quantity of food; and as animals with biliary fistulæ (in whom all the bile escapes externally instead of making its way into the duodenum), usually have voracious appetites, experiments on this point are easily made. There is great discrepancy of opinion as to how soon after a meal the bile flows most abundantly into the intestine. According to Kölliker and Müller, whose experiments were made on dogs fed only once a day, very little bile is secreted in the first and second hour after a meal; more in the third, fourth, and fifth; the maximum being sometimes attained in the fifth, sometimes not till the eighth hour.

Numerous and somewhat discrepant views have at different times been advanced regarding the functions of this fluid; our present concern is with only those functions connected with digestion. One use that has been ascribed to it, is to neutralize in the small intestine the acid chyme which emerges from the stomach. But the bile can contribute little or nothing to the neutralization of the free acid, because, in the first place, the bile is very slightly alkaline, and often perfectly neutral; and secondly, because the chyme in the intestine is still acid after the admixture of the bile. Again, the bile has been asserted to possess a special solvent action on the chyme; but none of the ordinary constituents of the latter seem to be essentially changed, even when digested for a long time with fresh bile. Again, much importance has been attached to the antiseptic action of the bile on the contents of the intestinal canal, in favor of which view it is alleged that when no bile is poured into the intestine, the fæces have a putrid odor, as is sometimes observed in patients with jaundice, and as was noticed by Frerichs in animals in which the *ductus choledochus* had been tied. Another use that has been assigned to the bile is, that it exerts a stimulating action on the intestinal walls, and thus acts as a natural purgative; and in support of this view, it may be mentioned that jaundice (in which the bile does not flow into the intestine) is often accompanied by extreme constipation, and that purified ox-gall, taken either in the form of pill or enema, produces an undoubted purgative action. But the main use of the bile seems to be to promote the digestion of fatty matters, and it accomplishes this not so much by any solvent chemical action on the fats (which at most is extremely slight), as by a peculiar physical action both on the fats and on the intestinal walls, disintegrating the former, and impressing on the latter (by moistening the villi) a peculiar condition which singularly facilitates the absorption of fatty matters. This view is fully confirmed both by direct experiments outside of the body, and by comparing the relative qualities of fat that are retained in the body and applied to the purposes of life by animals with biliary fistulous openings, and by healthy animals.

The pancreatic fluid which is poured into the duodenum at the same spot with the bile (see fig. 1), is a colorless, clear, somewhat viscid and ropy fluid, devoid of any special odor, and exhibiting a strong alkaline reaction. This fluid, as yielded by different dogs with permanent fistulous openings, varies considerably in chemical composition; the collective solid constituents ranging from 1·5 to 2·3 per cent., the organic matters from 0·9 to 1·6, and the mineral matters from 0·62 to 0·75.

The most abundant and important of the solid constituents is a peculiar substance termed *pancreatine*, or pancreatic diastase or ferment, in combination with soda, to which this fluid owes its principal chemical and physiological properties. Calculating from the quantity of pancreatic juice secreted by dogs of known weight, we may infer that a man weighing ten stone secretes daily about ten ounces of this fluid.

One of the chief uses of the pancreatic juice in relation to digestion, is to convert into sugar the amylaceous or starchy matters which have escaped the action of the saliva, and have passed unchanged into the duodenum. It possesses this property in a far higher degree than the saliva; and, as might be expected in reference to this use, the pancreas is found to be much more developed in herbivorous than in carnivorous animals. Bernard, the representative of the modern school of physiology in France, claims for this fluid another important function; he believes that he has proved that it is solely by the action of this secretion that the fat is reduced to a condition in which it can be absorbed and digested; that is to say, that it is decomposed into glycerine and a fatty acid: see FATS. This view has not been generally accepted, and it seems probable that though the change described by Bernard takes place when fat and pancreatic juice are simply mixed together in a test-tube, it does not actually take place in the intestine, the acid gastric juice probably acting as an interfering agent. An attempt has lately been made by Corvisart and Meissner to prove that, like the gastric juice, this fluid can dissolve albuminous matters; but this view cannot be substantiated. Considering the large quantity of pancreatic fluid which is yielded in 24 hours, Schmidt, who has made the digestive juices the subject of his special study, is of opinion that the function of this fluid is not so much to promote the conversion of starch into sugar, as for the purpose of diluting the chyme, and for reconverting the soda (which in the pancreas has been separated from the chlorine of the chloride of sodium, and has combined with the pancreatine) into chloride of sodium. He shows, from numerical calculations, that more than half of the chloride of sodium existing in the blood which circulates through the pancreas, is broken up into hydrochloric acid and soda, of which the former is separated by the gastric glands, while the latter unites with the pancreatine. Meeting again in the duodenum, the hydrochloric acid and the soda reunite, and re-form chloride of sodium, which is again absorbed, and re-enters the circulation. This is perhaps one of the most singular decompositions and reunions occuring in the animal body.

Of the last of the fluids poured into the intestine, and co-operating in the digestive process, the *intestinal juice*, we know comparatively little. It is the aggregate secretion of the various glands above described as occurring in the walls of the small intestine. It is a colorless, or sometimes yellowish, ropy, viscid fluid, invariably alkaline. We are not aware of any special or characteristic constituent in it, such as occurs in the other chylopoietic fluids. Its daily quantity is probably nine or ten ounces. It seems to unite in itself the leading properties of the pancreatic and gastric juices; that is to say, it resembles the former in converting starch into sugar, and the latter in dissolving flesh and other albuminous bodies.

Turning to the chemical composition of the contents of the small intestine, we usually find, on laying open the gut, a semi-solid admixture of imperfectly digested and indigestible substances and of the constituents of the digestive fluids in a more or less changed condition. The reaction of this mass varies in different parts of the canal, and in some measure with the nature of the food. Thus, the contents of the stomach always redden litmus paper, whatever kind of food has been taken; the duodenal contents are also always acid, but in a far less intense degree; in the jejunum we meet with only a faint acid reaction, which altogether disappears in the ileum; while in the cæcum, and sometimes in the lower part of the ileum, an alkaline reaction occurs. After a purely flesh diet the acid reaction disappears shortly below the duodenum, while after the sole use of vegetable food, it may sometimes be traced even to the cæcum. As a general rule, the contents of the large intestine are alkaline.

In consequence of the rapid absorption that goes on along the intestinal surface, we find only a comparatively small amount of soluble matters in these contents. Among these soluble matters is often glucose (or grape-sugar), which seems to owe its origin to the metamorphosis of starch, and not to sugar having been present in the food; for after saccharine food has been taken, it is rarely found in any quantity in the small intestine, its absorption taking place with great rapidity. In the alcoholic extract of these contents we can almost always find evidence of the presence of biliary constituents. In the duodenum, and for a little way beyond it, we find glyco-cholic and tauro-cholic acid; descending a little further, they rapidly diminish, till we find the products of their disintegration; while in the large intestine, little more than a trace of these products can be detected. These chemical observations confirm the experiments of Schmidt, which show that nearly half the bile which is poured into the duodenum is decomposed before it reaches the middle of the small intestine.

7. We have now arrived at the seventh stage of the digestive process, that of *defecation*. The line of demarkation between the small and large intestine is very obvious, and by the peculiar arrangement of the ileo-cæcal valve (see fig, 10), matters are allowed to pass forward with facility, while regurgitation is prevented. For anatomical details regarding the large intestine, see ALIMENTARY CANAL: CÆCUM: COLON. The contents of the large intestine differ very materially from those which we have been considering in the last paragraph, and constitute the fæces. They are more solid and homogeneous, and are often molded into a definite shape by the cells of the colon. The only essential change which the contents undergo in this part of their course is, that they increase as they pass onward in solidity, in consequence of the absorption of fluid from them by the mucous membrane. They are propelled forward into the rectum by the vermicular action which has been already described. Here they accumulate, being prevented from escaping by the contraction of the sphincter muscle—a band of strong muscular fibres surrounding and closing the gut at its lower ex-

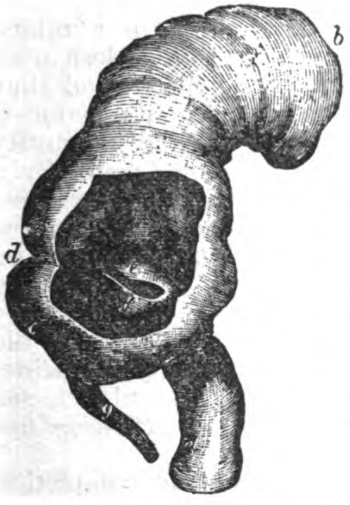


Fig. 10.

Cæcum inflated, dried, and opened to show the arrangement of the valve.

a, termination of the ileum; *b*, ascending colon; *c*, cæcum; *d*, a transverse construction projecting into the cæcum; *ef*, lips of the valve separating the small from the large intestine; *g*, the vermiform appendix of the cæcum.

tremity. The act of defecation, or of expulsion of the fæces from the rectum, is effected partly by the muscular fibres of that part of the intestine which are stimulated to contraction by a certain degree of distension, and which are to a certain extent under the influence of the will, and partly by the simultaneous contractions of the abdominal muscles and of the diaphragm, which, by reducing the antero-posterior and transverse diameters of the abdominal cavity, compress the intestinal canal in such a manner as greatly to assist the expulsive action of the rectum. These forces, or some of them (for usually the detrusive action of the muscular fibres of the rectum is sufficient), overcome the passive contraction of the sphincter, and the act of defecation is the result.

The fæces consist of a mixture composed of undigested particles of food (such as vegetable cellular tissue, fragments of tendon, skin, and half-digested muscular fibre), of epithelium and mucus (derived from the intestinal walls), and of traces of decomposed biliary matters. Their peculiar odor is ascribed by some to the secretion of Peyer's glands, and by others to decomposed bile; while Liebig refers it to a decomposition of albuminous matters, founding his view upon the fact, that by burning albumen with potash, he could manufacture in the laboratory odors of fecal character. The last is the least probable view. Their color varies with the food. On a mixed diet, they are of a yellowish-brown tint; on a flesh diet, much darker; and on a milk diet, quite yellow—and they become darker on exposure to the air. Their reaction is usually but not invariably alkaline. Their daily quantity is very variable; the mean of 17 observations made by a German physiologist, Wehsarg, was about 4·6 ounces, of which very nearly one ounce was solid matter, the rest being water; the largest and the smallest quantities being 10 ounces, and rather more than 2 ounces. Liebig, many years ago, made the observation that the insoluble salts of the food are carried off mainly by the fæces, while the soluble salts are for the most part eliminated by the urine. For further details on the chemistry of this subject, see the elaborate Memoirs of Dr. Marcet, in *Philosophical Transactions.*

8. The absorption of the chyle forms the completion of the digestive act. The coats of the intestines contain two perfectly distinct sets of vessels—one through which blood circulates, and the other containing a milky or transparent fluid, chyle or lymph, which, after a somewhat circuitous route, is poured into the blood. We have already noted the fact, that fluids are absorbed from the stomach and intestine by the veins and capillaries of the mucous membrane; we proceed to the mode in which the vessels of the second kind, the lacteals, act as absorbing agents. The lacteals are merely a portion of the great lymphatic system of the body: see LYMPHATICS. They commence in the villi, possibly also in the intervening mucous membrane; and when an animal is killed while the digestive process is going on, they have, in consequence of

their being distended with chyle, the peculiar white or milky appearance which procured for them from their discoverer, Asellius, 1622, their name of *vasa lactea.* They pass in great numbers, and in a reticulated arrangement, between the layers of the mesentery, the portion of Peritoneum (q.v.) which surrounds the gut, and retains it in its proper position. After passing through the mesenteric glands, where their contents seem to become more highly organized, they make their way to the right side of the aorta in the lumbar region, where they finally discharge themselves into an elongated pouch, termed the *receptaculum chyli.* From this pouch, the thoracic duct, containing the chyle, passes upward along the vertebral column till it reaches the level of the arch of the aorta, behind which it runs to the left side, and discharges its contents into the subclavian vein, close to its origin with the internal jugular, its orifice being protected by two valves. For nature of these contents, see CHYLE. This chyle is, in reality, incipient blood, which has been formed, as we have already seen, from the food, and has been absorbed from the intestine by the lacteals. We have now traced it to its entrance into the general circulation, and it only remains for it to pass, in conjunction with the venous blood with which it is mixed, through the lungs, in order to be converted into new and perfect arterial blood, fit for the highest processes of organization,

Turning now from the human subject, we find some striking peculiarities presented by the digestive organs in the lower animals.

In the mammalia are three different forms of stomach—the *simple*, the *complex*, and the *compound*. In the *simple* form, the organ consists of a single cavity, as in man, but the form may vary greatly. It is most simple and relatively smallest in carnivorous animals. This is the most common form of mammalian stomach. In the *complex* stomach, that viscus is made up of two or more compartments communicating with one another, but often without presenting any marked difference of structure. The kangaroo, the porcupine, and the squirrel, afford good examples of this form of stomach. In the cetacea, the stomach consists of from five to seven cavities, that communicate with each other; but whether their functions are similar or different is not known. The *compound* stomach occurs in the ruminants (the cow, sheep, camel, etc); it consists of four distinct cavities, differing very materially in their size, and in the arrangement and structure of the lining mucous membrane (see fig. 11) The first, and by far the largest cavity, is the paunch or *rumen, b;* it occupies a great part of the abdominal cavity, and is the receptacle into which the food is received when first swallowed. The second cavity is termed (from the peculiar arrangement of the lining membrane, which forms deep polygonal cells) the honey-comb or *reticulum, c* The third cavity presents a foliated appearance internally, and thence is popularly known as the manyplies, *d.* In anatomical works, it is termed sometimes the *psalterium*, and sometimes the *oma-*

sum. The fourth division, termed the reed or *abomasum*, *e*, is somewhat of a pyriform shape, and is the true digestive stomach, in which alone gastric juice is secreted, all the preceding cavities being merely for the purpose of preparing the food for the more essential changes which it is here destined to undergo. The food passes first in a crude unmasticated state into the paunch, which, like the crop of birds (noticed below) serves as a receptacle for the food until the act of feeding is concluded, and moistens it with the fluid secreted from its walls. The water, however, which the animal drinks, seems to pass direcly into the second stomach. During rumination, small portions of the food pass from the paunch into this second stomach, whence they are returned, in the form of pellets, to the mouth, where they undergo thorough mastication, and are then returned, as a pulp, by the esophagus directly into the third stomach. The direction of the food into one or other of these cavities is altogether independent of the will, and results from a peculiar arrangement and property of the lower end of the esophagus, which does not terminate at its opening into the paunch on one side, and the second stomach on the other, but is continued onward as a deep groove or semi-canal, with two lips. If these lips come in contact, they form a perfect canal, leading

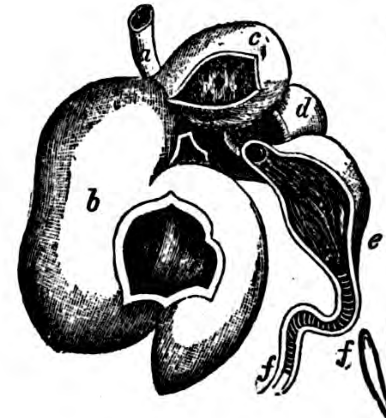


Fig. 11.
Compound stomach of ox.
a, **esophagus; *b*, rumen, or paunch; *c*, reticulum, or second stomach; *d*, omasum, or third stomach; *e*, abomasum, or fourth stomach; *f*, the duodenum.**

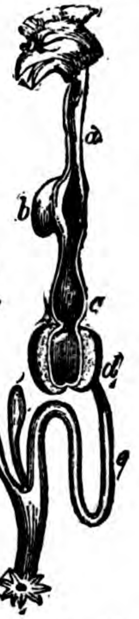


Fig. 12.
Alimentary canal of fowl.
a, **esophagus; *b*, crop; *c*, proventriculus, or secreting stomach; *d*, gizzard, or triturating stomach; *e*, intestinal canal; *f*, two long cæcal tubes indicating the theoretical commencement of large intestine.**

directly to the third stomach; while if they remain open, the food passes into the first or second stomach. The dry food first swallowed opens the lips and escapes into the paunch, while the masticated food, being soft and pulpy, passes along the groove, without opening its lips, into the third stomach. Here it is diffused over a large surface of mucous membrane, and doubtless undergoes certain changes before entering the fourth or true stomach. In the camel, the dromedary, and the llama, numerous rows of large quadrangular deep water-cells are developed on the parietes of the second stomach, and on the part of the paunch next to that cavity. These cells are surrounded by muscular fibres, which, by their contraction, exclude the food from their interior, and by their gradual opening, the water is allowed to mix in successive small quantities with the food. It is by this arrangement that these animals only require to drink at comparatively long intervals. The intestinal canal of the ruminants is of great length, being sometimes, as in the sheep, more than thirty times the length of the body of the animal; and in herbivorous animals generally, as compared with carnivorous, the canal is very long.

It is in the large intestine that, next to the stomach, we find most varieties of structure. Cuvier has given the following *résumé* of the principal facts connected with this subject, to which, however, there are numerous exceptions. 1. In man, the orangs, and the wombats, there are both cæcum and vermiform appendix. 2. In the other quadrumana, the digitate carnivora, the marsupiata, the rodentia, the pachydermata, the ruminantia, the solipeds, and the amphibious mammals, there is a cæcum (often in vegetable-feeders larger than the stomach, and probably subservient to the digestive process), but no vermiform appendix. 3. In the edentata, the plantigrade carnivora, and the cetacea, there is neither cæcum nor vermiform appendix.

In birds, as in all other classes of animals, the alimentary canal varies according to the nature of the food; being long and capacious, and in some parts highly muscular, in the granivorous tribes, while it is much more simple in those which live on fish and other animal food. The common fowl is a good example of the former class (see fig. 12). The esophagus, about the middle of its course, a little above the union of the clavicles (the furculum), presents an enlargement termed the crop or *ingluvies*, which varies in form and structure according to the food, and is provided with numerous glandular follicles. Just before terminating in the gizzard, the esophagus again dilates to form a second but smaller cavity, known as the glandular stomach, *proventriculus*, or *ventriculus succenturiatus*, *c*, whence a copious secretion of gastric juice is poured out and mixed with the food, which, having previously been macerated by the secretion of the crop, now passes on to the gizzard, *d*, which is a muscular organ of immense strength, which grinds and crushes whatever is placed in its central cavity—a process that is facilitated by the presence of hard pebbles, which are instinctively swallowed by the bird, and act the part of millstones. There is no very marked division in birds between the large and small intestine, the theoretical limit being indicated by the presence of two (sometimes only one) cæcal appendages, *f*.

The digestive organs of reptiles present no special points, except that as the ophidians (serpents) and saurians (lizards) are mostly carnivorous, and most of the chelonians (tortoises) are herbivorous, the apparatus in question is more simple in the former than in the latter.

The amphibia afford an excellent illustration of the close connection between the nature of the food and the development of the intestinal canal. In the young tadpole of the common frog, which lives upon the soft vegetable matter of fresh-water ponds and ditches, the stomach is narrow and elongated, and the intestine is of extraordinary length, and of nearly equal diameter throughout, being coiled up in a spiral manner, and distending the capacious abdomen. As the tadpole becomes metamorphosed into a frog, it changes its vegetable food for slugs, worms, grubs, flies, etc., and, at the same time, the alimentary canal becomes very much shortened, and its divisions into stomach, etc., more distinctly marked.

In osseous fishes, the alimentary canal is generally shorter and more simple than in the higher vertebrata, in many—as, for example, the herring—being shorter than the body, and, excepting the stomach, running in nearly a straight line through it. In the cartilaginous fishes, as the sharks, rays, etc., a spiral valve winds in close turns from the pyloric to the anal extremity, leaving merely a small central aperture, along which the contents slowly pass. By this singular arrangement, the intestine, though short in proportion to the length of the animal, presents an enormous absorbing surface.

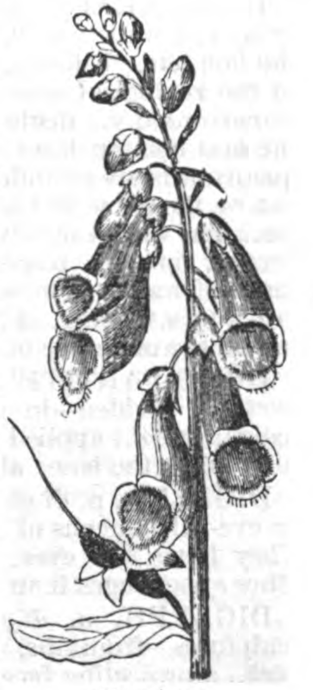
There are various modifications presented by the digestive organs in the different classes of the invertebrate animals. Among the lowest and simplest animals, is the *hydra* or fresh-water polyp, a minute creature, consisting of nothing but a bag or stomach, with tentacles surrounding its single orifice. The animalcules, etc., which the hydra catches by these lasso-like tentacles (see HYDRA), are drawn into the interior, where they are digested, and applied to the nutrition of the organism, the insoluble portions being rejected by the aperture through which they entered. In the *actinophrys sol*, or sun-animalcule, there is no persistent aperture ; but when its radiating filaments—from which it derives its name—have secured a particle of organized matter fit for its nourishment, they twist over it, compress it against the globular body, which first yields, and becomes concave at the point, and finally closes over it, the prey being distinctly visible in the interior. This astomatous animalcule can thus form a mouth and stomach when it requires them. The indigestible remains are ejected by a corresponding reversed process. The *amæba* or *sponge-proteus* neither has a mouth and stomach, nor can it construct these organs: it simply folds itself around the solid particles from which it derives its nourishment, and imbibes their nutritious fluids through its cell-wall. Various other examples of animals, devoid of a permanent stomach, might be adduced, but sufficient evidence has been presented that the old doctrine, that this organ is a necessary constituent of an animal, cannot be sustained, when we approach that debatable-land which separates the two great organized kingdoms of nature.

DIGGED, DIGGING: see under Dig.

DIGHT, v. *dīt* [AS. *dihtan*, to set in order, to arrange: Ger. *dichten*, to meditate, to contrive: Scot. *dicht*, to prepare]: to dress; to adorn; to prepare. Dight'ing, imp. Dight'ed, pp.

DIGIT, n. *dĭj'ĭt* [L. *digĭtus*, the pointing thing, a finger, akin to Skr. *diç*, to show, to point out: It. *digito*, a finger]: an arithmetical figure—the digits are from 0 and 1 to 9: in *measure*, a finger's breadth, or ¾ of an inch: in *astrŏn.*, one-twelfth part of the apparent diameter of the sun or moon; thus an eclipse of 6 digits is an eclipse covering one half of the sun or moon: in *anat.*, a finger or toe. Dig'ital, a. *-ĭ-tăl*, pertaining to the fingers or resembling them.

DIGITALIEÆ, n. plu. *dĭ-jĭ-tă'lĭ-ē-ē* [L. *digitalis*, pertaining to a finger]: a tribe of the sub-order *Rhinanthideæ*, in the arrangement of *Scrophulariaceæ* given by Bentham and adopted by Lindley.


Foxglove.
(*Digitalis purpurea*).

DIGITALIS, n. *dĭj'ĭ-tă'lĭs* [L. *digĭtālis*, pertaining to the finger—from *digĭtus*, a finger]: genus of plants of the nat. ord. *Scrophulariaceæ*, natives chiefly of the s. of Europe and temperate parts of Asia. One, the common Foxglove (*D. purpurea*), is a native of Britain, abundant in some parts, where its large purple flowers often give a gay appearance to dry banks and steep hills. It is frequent in flower-gardens, particularly a white-flowered variety. Its English name, and the botanical name D., both refer to the form of its flowers. Central and southern Europe produce several species with yellow flowers; one *D. grandiflora*, common in gardens. *D. purpurea* is much valued in medicine. Its leaves and seeds are the parts used, generally the former. They are narcotic and poisonous. The leaves have a disagreeable smell when fresh, and a bitter nauseous taste, and are violently emetic and cathartic; but when dried and administered in small and repeated doses, they are diuretic, and therefore sometimes useful in dropsy; and are still more valuable on account of their sedative power over the action of the heart and the circulation of the blood, and are used in diseases of the heart, aneurisms, hemorrhages, etc. They appear also to possess some peculiar power over the brain and nervous system, and have been employed in insanity, epilepsy, and other diseases. They are administered generally in the form either of tincture or infusion. They ought to be collected before the flowers expand. The use of D. as a medicine requires great caution on account of its property—remarkable in a vegetable medicine—of cumulative action on the system. Many, if not all of the species of D appear to possess similar properties with *D. purpurea*, and to be capable of being substituted for it. DIGITALIN, or DIGITALINE, n. *dĭj'ĭ-tă-lĭn*, a crystalline principle containing the active properties of *Digitalis purpurea* or *foxglove*.

DIGITA'RIA: see MILLET.

DIGITATE, a. *dĭj'ĭ-tāt*, or DIG'ITATED, a. *-tā-tĕd* [L. *digĭtātus*, having fingers or toes—from *digĭtus*, a finger]: in *bot.*, branched like fingers—applied to a compound leaf, composed of several leaflets attached to one point. DIG'ITA'TION, n. *-tā'shŭn*, a division into finger-like processes. DIG'ITATELY, ad. *tāt-lĭ*. DIG'ITIFORM, a. *-ĭ-tĭ-fawrm* [L. *forma*, shape]: in *bot.*, applied to an anomalous corolla shaped like the finger of a glove.

DIGITIGRADE, a. *dĭj'ĭ-tĭ grād* [L. *digĭtus*, a finger; *grădĭŏr*, I walk]: walking on the toes, as the cat, the weasel, the lion, etc.; belonging to the ord. DIG'ITIGRA'DA, *-grā'dă*, in the zoological system of Cuvier, one of the tribes of the *Carnivora* (q.v.), distinguished by walking on the toes alone, the heel not touching the ground. Among the digitigrade quadrupeds are included the most carnivorous of the *Carnivora*, the feline and canine families; hyenas, civets, weasels, etc. The weasel family (*Mustelidæ*), however, forms a connecting link, in respect to the character derived from the mode of walking, between the tribe D. and the tribe *Plantigrada* (q.v.), being, in fact, semi-plantigrade, and not walking on the mere tips of the toes, like the other digitigrada.

DIGITIPARTITE, a. *dĭj'ĭ-tĭ-pâr-tīt* [L. *digĭtus*, a finger; *partītus*, divided—in allusion to the five fingers of the hand]: in *bot.*, applied to a leaf with five divisions extending to near the base; also called ‘quinque-partite.’

DIGLENA, n. *dī-glē'na* [Gr. *dis*, twice, two-fold; *glēnē*, an eye-ball]: genus of *Rotatoria*, of the family *Hydatinæa*. They have two eyes; frontal foot forked. There are no other appendages than the foot and the rotatory organ.

DIGLYPH, n. *dī'glĭf* [Gr. *digluphos*, having double sculptures—from *dis*, twice; *glupho*, I hollow out]: in *arch.*, a projecting face, like the triglyph, but having only two grooves on its surface.

DIGNE, *dēñ* (Lat. *Dinia*): town in the dept. of the Basses-Alpes on the Bléonne, 60 m. of Marseille, occupies a picturesque situation upon a mountain slope, and is encircled by walls, but its streets are narrow, crooked, and steep, and the houses mean and squalid. Its chief building is the Préfecture, once the bishop's palace, a very ordininary edifice. The principal manufactures are articles of leather, and it has a trade in dried fruits, honey, wax, woolen and linen cloth, kid-skins, etc. In the neighborhood are several hot saline springs, temperature 104° F. Of Dinia, mentioned by Pliny, nothing remains. It is known that it embraced Christianity at an early period, and has given title to a bishop since the year 340. In 1629, a plague reduced the population of D. from 10,000 to 1,500. Precent pop. abt. 6,000.

DIGNIFY, v. *dĭg′nĭ-fī* [OF. *dignifier*—from L. *dignus*, worthy; *făcĭō*, I make: It. *dignificare*, to dignify]: to invest with honor; to exalt in rank; to promote. DIG′NIFYING, imp. DIG′NIFIED, pp. *-fīd:* ADJ. marked with dignity; noble; lofty. DIG′NITY, n. *-nĭ-tĭ* [F. *dignité*, a dignity—from L. *dignĭtātem*]: nobleness or elevation of mind; true honor; grandeur of mien; an office giving high rank with jurisdiction or power; the rank or title of a nobleman. DIG′NITARY, n. *-tėr-ĭ*, in *prelatical churches*, a clergyman who holds an office in the church superior to a parochial clergyman; in present usage it includes not only bishops and deans, but also canons and prebendaries.—SYN. of 'dignify': to exalt; honor; elevate; advance; prefer; ennoble; adorn; illustrate;—of 'dignity': loftiness; haughtiness; elevation; preferment; honor; elegance; impressiveness; decorum.

DIGRAPH, n. *dī′grăf* [Gr. *dis*, twice; *grapho*, I write]: a combination of two letters to express one sound, as *ph* = *f*, *ea* or *œ* = *e*, or *th* in brea*th*.

DIGRESS, v. *dĭ-grĕs′* [L. *digressus*, a going away, a departure—from *dis*, *gressus*, a step: It. *digresso*]: *lit.*, to step or go out of the way, in speaking or writing; to depart from the main subject or design; to introduce unnecessary matter. DIGRES′SING, imp. DIGRESSED′, pp. *-grĕst′*. DIGRES′SION, n. *-grĕsh′ŭn* [F.—L.]: a departure frem the main subject or design. DIGRES′SIONAL, a. pertaining to. DIGRES′SIVE, a. *-grĕs′sĭv*, departing from the main subject. DIGRES′SIVELY, ad. *-lĭ*.—SYN. of 'digress': to amplify; deviate; wander; expatiate; transgress.

DIGYN, n. *dī-jĭn′* [Gr. *dis*, twice; *gūnē*, a woman]: in *bot.*, a plant having two styles or pistils. DIGYNIAN, a. *dī-jĭn′ĭ-an*, or DIGYNOUS, a. *dĭj′ĭ-nus*, having two styles or pistils, as in the DIGYNIA, *dī-jĭn′ĭ-ă*.

DIHEDRAL, a. *dī-hē′drăl* [Gr. *dis*, twice; *hĕdra*, a side or face]: having two sides or surfaces. DIHE′DRON, n. a figure with two sides or surfaces.

DIHEXAHEDRAL, a. *dī-hĕks-a-hē′dral* [Gr. *dis*, twofold; Eng. *hexahedral*]: having the form of a hexahedral prism with trihedral summits.

DIHONG, *dē-hŏng′*, or SANPO′: largest feeder of the Brahmaputra. It rises on the n. side of the Himalayas, near the sources of the Sutlej and the Indus, lat. 30° 25′ n., and long. 82° 5′ e.; and bursts through that great mountain-chain near lat. 28° 15′ n., and long. 95° 10′ e., having pursued through Tibet an easterly course of about 1,000 miles. Finally, it joins the more easterly branch of the Brahmaputra, near the n.e. angle of Assam.

DIJON, *dē-zhŏng′:* town of France, dept. of Côte d'Or; formerly cap. of the old duchy of Burgundy; lat. 47° 20′ n., and long. 5° 2′ e., about 195 m. s.e. of Paris by railway. D. occupies a most delightful situation in a fertile plain on the right bank of the Ouche, at the base of the vine-clad hills which produce the famous Burgundy wines. The environs are exceedingly beautiful. D. is surrounded by old walls, originally having but five gates; and the ramparts, tastefully planted with fine trees, furnish agreeable promenades. The town is for the most part well and regularly built, and the streets spacious and clean. Among public buildings, which are numerous and imposing, the chief are the cathedral, a massive Gothic structure, dating from the 13th c., with a tall wooden spire, above 300 ft. high; the church of Notre Dame, a noble specimen of the purest Gothic; the church of St. Michael, with a splendid renaissance front; the theatre, a handsome building, with a fine Corinthian portico; and the palace of the dukes of Burgundy, now used as the town hall, and much modernized externally, but possessing interiorly some of its earlier features, and containing a museum very rich in monuments of the middle ages, besides a library of 50,000 vols. and several hundred manuscripts. D. is also the seat of a university academy with three faculties—law, science, and letters—and possesses, in addition, a royal college, a theol. seminary, a botanic garden, and an acad. of art. The manufactures of D. consist of woolen cloth, blankets, hosiery, leather, vinegar, chemical products, etc.; and there are salt refineries, distilleries, and breweries; but the town is mainly dependent on its trade in the wines of Burgundy. D. dates from Roman times, its ancient name being *Dibio*. It came into the possession of the Burgundians in the 5th c., and from them passed to the Franks. In the 9th c., it was ruled by counts of its own, under the suzerainty of the bishops of Langres. In the 11th c., it was united to the duchy of Burgundy, of which it became the capital, and the usual residence of the dukes, who rebuilt and greatly enlarged and improved it. In 1870, Oct., after a sharp engagement before the city, D. capitulated to a German force. There was again severe fighting here, 1871, Jan.—Pop. (1881) 53,899.

DIKAMALLI, *dĭk-a-măl′ĭ:* a gum-resin which exudes, in amber-colored transparent drops, from the ends of young shoots of *Gardenia* (q.v.) *lucida*, an Indian tree. It has a very powerful fragrance, and has been found extremely useful in hospitals, in keeping away flies, and especially as a dressing for wounds and running sores.

DIKE, or Dyke, n. *dīk* [AS. *dic;* Dan. *dige;* Dut. *dijck*, a mound, a ditch: Icel. *diki;* Sw. *dike;* F. *digue*, a bank: Gr. *teichos*, a wall, a rampart. *Dike* and *ditch* are really the same word, and from the same root—the *ditch* and the bank or *dike* being constructed by the same act, viz., digging]: long artificial mound or embankment of earth or stones to prevent low lands from being inundated by the sea or a river; a ditch; a wall: V. to surround with a barrier. Di'king, imp. Diked, pp. *-dikt.*—The word *levée* is employed in France and the United States to signify this species of embankment, and since 1873 the word *jetty*, as applied to the method of improving the mouth of the Mississippi river, has borne the same general interpretation. The term D. also is applicable to breakwaters and dams. In no country has the construction of the D. been carried to such an extent as the Dutch Netherlands. A large part of Holland consists of meadow-land, formed of materials brought from Switzerland and Germany by the Rhine, and lying so low that it would be overflowed by the sea and the various branches of the Rhine during high tide if it were not protected, partly by natural sand hills, but more particularly by the remarkable system of diking that has excited the wonder of the world. These embankments resemble long mounds, broad at the base, gradual in slope, and often of sufficient width at the top to permit the construction of a canal or roadway or both. The base is frequently faced with masonry, and protected by great quantities of stones as well as by long rows of piles, six or seven feet above ground, connected by heavy timber ties, and filled in with fascines weighted with stones. In some instances the fabric is strengthened by the planting or the interweaving of willows as wicker-work on the sides of the D. Carried along the banks of rivers, and in many places along the margin of the sea, as well as cross-wise in the interior, a singular net-work of embanking is presented, which answers the double purpose of a protection against inundation and a means of providing canals, by which superfluous water, pumped from the meadows, may be run off into the sea. One of the most gigantic dikes is that constructed along the Helder river. It is 6 m. long, 40 ft. broad at the crown, along which there is a good road, and descends into the sea by a slope of 200 ft. inclined about 40 degrees. Another is that of West Kappel, at the w. extremity of the island of Walcheren. In 1574, when Holland was struggling to throw off the Spanish yoke, the city of Leyden, under siege, was plunged into the horrors of famine. For seven weeks the citizens had no bread to eat, and multitudes perished of hunger. In this emergency the Prince of Orange availed himself of the presence of the dikes, broke them down in several places, and thus flooding the country, drowned a great number of the Spaniards, and raised the siege of the city. In the United States, diking was confined to the construction of embankments along the Mississippi river to protect the cotton plantations against inundation at the periodical rising of the river till within a few years. About 1869 James S. Pike constructed a D. along a portion of the Hackensack and

Passaic rivers in N. J. for the purpose of draining the vast Hackensack meadows. The plan he followed consisted in sinking large iron plates into the muck near the margin of the rivers, and facing and backing them with squares of turf. Since the completion of the work the meadows have become sufficiently drained to warrant the Pennsylvania railroad company erecting upon them a great roundhouse and a cluster of large shops for the manufacture of passenger and freight cars. The greatest work, however, in this line was the construction of the jetties at the s.w. pass bar of the Mississippi river by Capt. James B. Eads. The work was begun 1875, June, on a contract by which Capt. Eads bound himself to deepen the bar to 28 ft. In 9 months' time he secured a depth varying from 8 to 13 ft.; in 1879, July, he gained a depth of 30 ft.; and an official survey, 1884, July 1, showed the least depth through the jetties to be 34 ft. Capt. Eads began his work by driving a single line of guide-piles, 12 ft. apart, from the land's end of the e. bank of the pass to a 30 ft. water mark 2¼ m. off. Parallel to this and 1,000 ft. w. a second line of piles was driven to a point 4,000 ft. beyond the limit of the first. Mattresses made of willow, usually 100 ft. long, from 2 to 3 ft. in thickness, and from 20 to 50 ft. wide, according to their location in the works, were then towed to the lines of piles and sunk by means of a ton or two of stone placed evenly upon them. At the bottom the mattresses rapidly filled with sediment and became immovable. They formed a foundation 35 ft. wide, 2 ft. thick, 2¼ m. long on the e. jetty, and 7,800 ft. long on the w. jetty. A second course 30 ft. wide, and a third 25 ft. wide were similarly placed, and a revetment of stone was subsequently placed several ft. thick over all the willows where they were not imbedded in deposit. Cribs, constructed of palmetto logs and filled with stone, were placed wherever an unusual force of water might endanger the jetties. Where the mattresses had become thoroughly settled they received a capping of concrete blocks. According to Capt. Eads's prediction before beginning the work, the channel is being constantly improved by the action of the water, and the sea-bottom beyond the jetties, where numerous engineers believed a new bar would be formed, is being deepened by the same agency.

DIKE, or DYKE, in Geology: rents frequent in volcanic districts, filled with molten materials from below, which materials subsequently solidify, and form solid walls, filling the fissures, and separating the edges of the disjointed strata. To these walls, geologists apply the term D., Scottish for a wall or fence. Similar walls of intruded matter occur in stratified rocks of all ages, and have been connected with volcanic eruptions belonging perhaps to every geological epoch. They consist of similar materials to whatever period they belong—viz., lava, either in a granular, compact, or glassy condition. The dikes connected with Vesuvius have been minutely described. Those in the great escarpment which Somma presents to the modern crater of Vesuvius permit of careful examination. They are chiefly vertical, and traverse at right angles the beds of lava, scoriæ, breccia, and sand which form the ancient cone. They project in relief several inches, sometimes several ft , from the face of the cliff, being extremely compact, and less destructible than the intersected tuffs and porous lavas. In vertical extent they vary from a few yards to 500 ft., and breadth from one to 12 ft. Many of them cut all the inclined beds in the escarpment from top to bottom, others stop short before they ascend above half-way, and a few terminate at both ends, either in a point or abruptly. In mineral composition, they scarcely differ from the lavas of Somma. Their texture is different at the edges and in the middle; toward the centre, the rock is larger grained, while at the edge it is always finer grained, sometimes vitreous. This evidently arises from the rate of cooling, it being known that molten trap or lava, when suddenly cooled, assumes a vitreous structure, while a slow cooling, as it permits the mass to remain in a condition fitted for the operation of the crystalline force, and the segregation of the separate materials, produces a more or less granular structure, in proportion to the time occupied in cooling. The rock forming the dikes is far more compact than that of ordinary lava, for the pressure of a column of melted matter in a fissure greatly exceeds that in an ordinary stream of lava; and pressure checks the expansion of those gases which form vesicles in lava. When the fissures have been openings for the egress of molten matter, the surfaces have been worn and smoothed by the current, the intense heat having melted all projections and obstructions to the passage of the incandescent fluid.

The appearances of ancient trap-dikes are very similar to those of recent volcanic dikes. Trap-dikes generally are prominent objects in the landscape, because, while the softer rocks through which they have intruded have been abraded by the sea, rivers, or rain, they, being more compact, stand out in the face of precipices or on the level surface of a country. Sometimes, however, from chemical action, chiefly from the oxidation of the iron which all trap-rocks contain to a greater or less extent, the intruded dike decomposes more rapidly than the containing rock. It then for some feet or yards leaves the original fissure again unoccupied A singular modification of this arrangement may sometimes be noticed, when the intruded igneous rock has so indurated the beds through which it passed as to make them less liable to weather than the unaltered portions of the beds, or than even the dike itself. In such cases, we find two parallel walls of indurated strata rising above the general level of the country, and forming the banks of a ditch produced by the disappearance of so much of the dike. All these appearances may be observed in the island of Arran, Scotland, a locality unsurpassed for observing those remarkable geological phenomena. Some dikes have had no apparent influence on the adjoining strata, even when these consist of materials most liable to be affected by heat. Thus seams of coal sometimes remain unaltered, though in contact with the supposed injected molten matter. Considerable doubt is thus cast upon the generally received opinion, that in all cases dikes were intrusions of lava. The effects that have been produced in numerous instances can, however, be accounted for only by supposing that the adjacent rocks have been affected by heat. It has been observed in Arran, at a place where a dike cut at right angles an older one, that the edges of the older dike, which had been acted upon by the current of liquid lava, were converted into true obsidian to the depth of nearly half an inch. In Anglesea, shale at the edge of a dike 134 ft. wide has been converted into hard porcellaneous jasper; and argillaceous limestone loses its earthy texture, and becomes granular and crystalline. The chalk, in Antrim, is converted, by basaltic dikes, into granular marble. Coal, as might have been expected, is often altered in an extraordinary degree. Witham describes the effects of the Cockfield Fell dike on a seam of coal through which it passes. It is a nearly vertical wall of trap, 18 or 20 yards thick, and is traceable 70 m. in a s.e. direction. The coal is about 6 or 8 ft. thick, and is affected about 50 yards from the dike. It first loses the calcareous spar, which occurs in the joints and faces, begins to look dull, and loses its quality for burning. As it comes nearer, it assumes the appearance of a half-burnt cinder; and approaching still nearer the dike, it grows less and less in thickness, becoming almost a hard cinder only two ft. and a half in thickness. Eight yards further, it is converted into real cinder; and more immediately in contact with the dike, it becomes a black substance resembling soot caked together, the seam being reduced to nine inches in thicknes. The coal thus deteriorated is 25 yards of bad short coal, half reduced to cinder; 16 yards of cinder; and 10 of sooty substance.

DIKOWA, *dē-kow′â*, or DEEGOA, *dē gō′â:* large town of Bornu, central Africa, about 30 m. s.w. of Lake Tchad. It is in a great cotton-growing district, and has considerable trade. The spinning and weaving of cotton are extensively carried on. The houses are mostly of clay, but each has its court-yard. Pop. supposed about 30,000.

DILACERATE, v. *dī-lăs′ėr-āt* [L. *dis*, apart; *lacerātus*, torn]: to tear or rend; to force in two. DILAC′ERA′TION, n. *-ā′shŭn*, a tearing or rending.

DILAPIDATE, v *dĭ-lăp′ĭ-dāt* [L. *dilapĭdātus*, squandered, wasted—from *dis*, *lapĭdem*, a stone: It. *dilapidare:* F. *dilapider*]: to fall into decay; to go to ruin; to waste or destroy, applied to buildings. DILAP′IDATING, imp. DILAP′IDATED, pp.: ADJ. wasted; suffered to go to ruin. DILAP′IDATOR, n. *-tėr*, one who DILAP′IDA′TION, n. *-dā′shŭn* [F.—L.]: destruction; demolition; decay; ruin. In *English law*, applied especially to ecclesiastical buildings. D. exists where an incumbent suffers his parsonage-house or outhouses to fall down, or be in decay, for want of necessary reparation; or pulls down or destroys any of the outhouses or buildings belonging to his living; or destroys woods, trees, etc.; for it is said to extend to committing or suffering any wilful waste on the inheritance of the church. —Stephens's *Eccl. Law*. D. is a species of the legal injury known as Waste (q.v.). A rector or vicar is bound to keep his residence and the chancel of the church in repair, but not to supply or maintain anything in the way of ornament, as painting, white-washing, or papering.

DILATE, v. *dī-lāt′* [F. *dilater*—from L. *dilātus*, spread abroad—from *dis*, apart; *lātus*, carried, borne]: to spread out; to expand in all directions; to enlarge; to dwell on in narration. DILA′TING, imp. DILA′TED, pp. DILA′TER, n. one who. DILA′TABLE, a. *-tă-bl* [F.—L.]: elastic; capable of expansion. DILATATION, n. *dĭl′ă-tā′shŭn* [F.—L.], or DIL′ATABIL′ITY, n. *-bĭl′ĭ-tĭ* [F. *dilatabilité*]: the act of expanding; a spreading or extending in all directions; expansion. DILATORY, a. *dĭl′ă-tėr-ĭ*, slow; tardy; sluggish; not proceeding with diligence; tending to delay. DILATORY PLEAS: see PLEA.—DIL′ATORILY, ad. *-lĭ*. DIL′ATORINESS, n. DILA′TOR, n. *dī-lā′tėr*, that which widens or expands—applied to a muscle.—SYN. of 'dilate': to expand; extend; distend; swell; spread out; amplify; expatiate; grow wide; descant;—of 'dilatory': procrastinating; slow; backward; delaying; sluggish; inactive; loitering; behindhand; lingering; tardy.

DILEMMA, n. *dĭ-lĕm′mă* [Gr. *dilemma*, a double proposition—from *dis*, twice; *lemma*, anything received, an assumption—from *lambanō*, I take]: any difficult or doubtful choice; an argument in which one is caught between two difficulties; a state of perplexity how to decide; in *logic*, an argument equally conclusive by contrary suppositions. A true dilemna is defined by Whately as 'a conditional syllogism with two or more antecedents in the major, and a disjunctive minor.' The following dilemma, of the kind called destructive, will perhaps convey a clearer notion than any definition. 'If this man were wise, he would not speak irreverently of Scripture in jest; and if he were good, he would not do so in earnest; but he does it, either in jest or earnest; therefore, he is either not wise, or not good.' There being two conclusions, one or other of which the opponent must admit, he is in a manner caught between them; hence we speak of the *horns* of a dilemma.

DILETTANTE, n. *dĭl'ĕ-tăn'tā*, Dil'ettan'ti, n. plu. *-tē* [It.—from *dilettare*, to delight in a subject—from L. *delectārĕ*, to delight]: an admirer or lover of the fine arts; an amateur; a dabbler. Dil'ettan'teism, n. *-tĕ-ĭzm*, the quality of being a dilettante; affectation of a knowledge of art. Dilettante in its original sense, is synonymous with *amateur*, or lover of the fine arts. It is often used as a term of reproach, to signify an amateur whose taste lies in the direction of what is trivial and finical; or a critic or connoisseur whose knowledge is mere affectation and pretense. It is sometimes assumed, in a spirit of self-depreciation, by those who are unwilling that their critical acquirements, or artistic productions, should be judged by the rules which would be applied to those of persons who had made a professional study of art. It was in this sense that it was assumed by the Dilettanti Society.—Dilettanti Society, body of noblemen and gentlemen by whose exertions the study of antique art in England has been largely promoted; the Society was founded 1734, and held its meetings at the Thatched House Tavern in St. James's Street, London. It was in its beginnings simply an amateur club, its object being to combine social and friendly intercourse with the cultivation of artistic knowledge and the gratification of artistic tastes. But its funds having accumulated to a large amount, its members, numbering abt. 60, fitted out, 1864, an expedition for collecting details and drawings of the most remarkable artistic monuments of antiquity; selecting for this undertaking, Mr. Chandler of Magdalen College, Oxford, editor of the *Marmora Oxoniensis;* Mr. Revett and Mr. Stewart, authors of the magnificent work on Athenian Antiquities; and Mr. Pars, a talented young artist. Having spent two years in Greece, they returned, bringing materials for two splendid vols. on the Antiquities of Ionia, published at the expense of the Society. Architecture had been the first object of their inquiries, but their attention was turned to sculpture, then at the lowest ebb in England. A series of the finest antique statues, bas-reliefs, and busts, selected and engraved with great care, appeared 1809, with dissertations by Payne Knight. In 1811, a second architectural exploring-party was dispatched by the Soc. of Asia Minor, consisting of Mr. (afterwards Sir William) Gell, Mr. Bedford, and Mr. Gandy. Two vols. were issued, one 1817, *The Unedited Antiquities of Attica;* a second, *Antique Sculpture*, 1835.

DILIGENCE, n. *dĭl'ĭ-jĕns* [F. *diligence*—from L. *dilĭgĕntĭăm*, carefulness—from *dis*. apart; *legĕrĕ*, to choose: It. *diligenza*]: steady application; industry; assiduity; in *Scot.*, care incumbent on parties to a contract; also, warrants by courts for enforcing attendance of witnesses and production of documents; also, a process of law by which a person or his property may be seized for debt (see EXECUTION). **DIL'IGENT**, a. *-jĕnt* [F.—L.]: steady effort to accomplish what is undertaken; attentive; not idle; industrious. **DIL'IGENTLY**, ad. *-lĭ*.—SYN. of 'diligence': constancy; attention; heed; heedfulness; caution; care; sedulousness; activity; assiduousness; labor; perseverance.

DILIGENCE, n. *dĭl'ĭ-zhângs* [F.: see DILIGENCE 1]: French stage-coach. It is a huge strong built vehicle, with four broad wheels; weighs about five tons, and is drawn by four stout horses, at the rate of about six miles an hour. It consists of three chief compartments: the front, called the *coupé*, for three persons; the second, called the *intérieur*, for six persons; and, lastly, the *rotonde*, entered from behind, for six persons. Aloft, in front, is the *banquette*, where the *conducteur* is seated; and behind this, underneath a thick leather covering, passengers are sometimes huddled among luggage and goods, with little regard to their comfort. All the places in the body of the vehicle are numbered, and assigned in the order of booking. Usually, an effort is made to be booked early, in order to secure corner-places. In booking, it is customary to pay only a portion of the fare, called *arrhes;* the remainder being paid at the end of the journey. For the arrhes, a receipt or bulletin ought to be given. Without this security, a traveller may be put down half-way and cheated out of his fare, or he may be compelled to pay over again. The driver being concerned only with the horses, the entire management of the vehicle, including the charge of the drag or break, devolves on the conducteur, a trustworthy but most dictatorial personage, dressed in a blue cloth jacket and cap, and having a badge on his breast indicative of his dignity. The greater number of the diligences in France belong to two companies in Paris—the *Messageries Impériales* and the *Messageries Générales*. The system of diligences, however, has been latterly much broken up by railway transit.

DILKE, *dĭlk*, Sir CHARLES WENTWORTH: b. Chelsea, England, 1843, Sep. 4: statesman and author. He graduated at Trinity College, Cambridge, 1866, was called to the bar the same year, and soon afterward spent several months travelling in Canada and the United States and then visited New Zealand, Tasmania, all the Australian colonies, Madras, Calcutta, Lahore, Bombay, and Egypt, making a complete circuit of the globe. On his return to England he published *Greater Britain: a Record of Travel in English-speaking Countries during* 1866–67, 2 vols. (1868). In 1868 he was elected to parliament as a radical, and though professing a preference for a republican form of govt. over a constitutional monarchy was unsuccessfully opposed for re-election 1874. In 1875 he published the works of his grandfather, Charles Wentworth D., with a memoir, under the title of *Papers of a Critic*, and made a second trip round the world. He was appointed under sec. of state for foreign affairs by Mr. Gladstone 1880, May; was chairman of the royal commission for the negotiation of a commercial treaty with France 1881–2; pres. of the local govt. board 1882; chairman of the royal commission on the housing of the working classes 1884; was returned to parliament 1885, and defeated 1886. In 1885 he married Mrs. Mark Pattison, widow of the late rector of Lincoln College, Oxford, and during that and the following years was prominently before the public in connection with the celebrated divorce case of Crawford *vs.* Crawford, which was decided in the husband's favor and with imputations against Sir Charles, which he denied, 1886, July. His chief legislative achievements were the creation of school boards directly elected by the taxpayers, the conferring of the municipal franchise on women, the abolition of the barbarous penalty of drawing and quartering, and the extension of the hours of balloting at parliamentary elections in the metropolis by the measure known as Dilke's Act.

DILL, n. *dĭl* [AS. *dile,* anise: Sw. *dill;* Dan. *dild;* prov. Dan. *dull,* still, quiet: Icel. *dill,* the nurse's lullaby], (*Anethum*): genus of plants of the nat. ord. *Umbelliferæ,* having compound umbels without general or partial involucres, the border of the calyx minute but 5-toothed, yellow involute petals, and dorsally compressed lenticular fruit. The COMMON D. (*A. graveolens*) is an annual or biennial plant, which grows wild in cornfields in the East and in the countries around the Mediterranean, but is quite hardy in Britain. It has from a very early period been in general cultivation as an aromatic, stimulant, and carminative, It has a stem 1–4 ft. high, bearing at top a flat umbel of 10–30 rays; the leaves much divided, and the final segments thread-like. It has a strong peculiar aromatic smell and taste; the leaves are sometimes used for flavoring pickles, sauces, etc. The fruit (*Dill seed*) is used in medicine, chiefly for relief of flatulence and griping in infants, and is administered in the form of *Dill Water,* in the preparation of which *Oil of Dill* is employed; a pale-yellow essential oil, on which the properties of the plant depend, and which is obtained by distillation.—SOWA A. (*A. Sowa*) is a native of Bengal, much cultivated in the E. Indies for its fruit, which is variously used in medicine and flavoring. It is a common ingredient in curries. The plant resembles Common D., but its flavor is stronger. DILL, v. to become inactive. TO DILL DOWN, to subside; to become still.

DILLENIACEÆ, *dĭl-lē'nĭ-ā'sē-ē,* or DILLE'NIADS, *-ădz* [named after J. J. *Dillenius,* professor of botany at Oxford Univ.]: natural order of exogenous plants, consisting chiefly of trees, shrubs, or half-shrubby plants, natives of tropical and subtropical regions, allied to the nat. ord. *Ranunculaceæ* (q.v.), but very different in general habit; allied also to *Magnoliaceæ,* which in habit they more resemble. They have usually alternate leathery leaves, without stipules. The flowers are sometimes solitary, sometimes in racemes or panicles; the calyx of 5 persistent sepals; the corolla of 5 deciduous petals. The stamens are numerous. The fruit consists of 2–5 distinct or coherent, dry or succulent, carpels. The seeds have an aril. Astringency is a general property of the order; and a number of species are used as vulneraries and for other medicinal purposes in their native countries Some species of *Dillenia* are large trees, and afford excellent timber. The young calyces of *D. scabrella* and *D. speciosa* have a pleasant acid taste, and are used in curries, and the fruit of *D. speciosa*, though very acid, is eaten with sugar; the juice, mixed with water, is employed in India as a cooling beverage in fevers. The fruit of *D. elliptica* is used to make a sauce for fish in Amboyna. Many of the plants of this order are remarkable for magnificence of foliage and of flowers. It contains two tribes, *Dilleneæ* and *Delimeæ*, with about 200 known species.

DILLING, n. *dĭl'lĭng* [comp. Gael. *diall*, fondness; *dile*, love]: a darling or favorite; the youngest child; the youngest of a brood.

DILLY-DALLY, v. *dĭl'lĭ-dăl'lĭ* [from *dally*]: to delay; to trifle; to loiter.

DILMAN, *dēl-mân':* town of n. Persia, province of Azerbijan, 50 m. n.n.w. of Urumiyah, 10 m. w. of the n. extremity of the lake of Urumiyah. It is of considerable extent. has clean streets, and is surrounded by gardens and orchards. D. is a new town; the former town of the same name, distant about 4 m , now in ruins, is described by St. Martin as a very ancient Armenian city, and the large plain in which it was situated is still inhabited by Armenians, Catholics, Nestorians, etc. Pop. of D. estimated at 15,000.

DILOGY, n. *dĭl'ŏj-ĭ* [Gr. *dilogia*, repetition]: a figure of speech in which a word is used in an equivocal sense; an expression which may have two meanings.

DILUTE, v. *dĭ-lôt'* [L. *dilūtus*, washed away, weakened —from *dis*, *lūtus*, washed: It. *diluire:* F. *diluer*]: to weaken or make thinner; to reduce the strength of, as with water. DILU'TING, imp. DILU'TED, pp.: ADJ. made thinner or weaker. DILU'TER, n. that which, or he who. DILUENT, n *dĭl'ū-ĕnt*, that which thins or weakens the strength of: ADJ. weakening the strength of by mixing with water; attenuating. DIL'UENTS, n. plu. weak drinks, usually of water, whey, and suchlike, used medicinally to dilute the blood and increase the quantity of the excretions. The best *general* diluent is water: see DEMULCENTS.—DILUTION, n. *dĭ-lô'shŭn*, the act of making thin or more liquid.

DILUVIAL, a. *dĭ lô'vĭ-ăl*, or DILU'VIAN, a. *-ăn* [L. *dilūvĭŭm*, a deluge—from *dis*, asunder; *lŭō*, I wash: It. *diluvio*]: pertaining to the flood or deluge in the days of Noah; effected or produced by a deluge; in *modern usage*, accumulations of gravel or angular stones, produced by extraordinary currents of water. DILU'VIUM, n. *-ŭm*, a great accumulation or deposit of earth, sand, etc., brought together by the action of great bodies of water; formerly in *geol.*, strata believed to have been formed by the Deluge; particularly the bowlder clay (q.v.). The altered opinions as to the origin of these beds have caused the word to fall into disuse. Accumulation of matter by the ordinary operation of water is termed ALLUVIUM, which see. DILU'VIALIST, n. *-ăl-ĭst*, one who ascribes to a universal deluge the bowlder-clay, the abraded and polished rock surfaces, ossiferous gravels, and similar phenomena on the earth's surface.

DIM, a. *dĭm* [from *dam*, in the sense of stop, obstruct: Bav. *daum*, a stopper: Icel. *dimmr*, dark, thick: Sw. *dimba*, a fog, a haze]: obscure; imperfectly seen or discovered; somewhat dark; tarnished; faint; vague: V. to cloud or obscure; to make less bright; to lessen the powers of vision; to sully or tarnish. DIM'MING, imp. DIMMED, pp. *dĭmd*, obscured. DIM'LY, ad. *-lĭ*. DIM'MISH, a. *-ĭsh*, somewhat dim. DIM'NESS, n. want of brightness; obscurity of vision. DIM-SIGHTED, having weak vision.—SYN. of 'dim, a.': dark; gloomy; opaque; dusky; mysterious; imperfect; dull; sullied; indistinct.

DIMA, *dē'mâ:* large town of Abyssinia, in the state of Amhara, on an affluent of the Abai, 150 m. s.s.e. of Gondar. The houses are mostly of stone, and the church is one of the largest edifices in Abyssinia. The town is divided into many quarters by stone walls.

DIME, n. *dīm* [F. *dime*, tithe—from OF. *disme*—from It. *decima;* L. *decĭmus*, the tenth]: in *United States*, a silver coin equal to one-tenth of a dollar, or ten cents, abt. five pence English: see DOLLAR.

DIMENSION, n. *dĭ-mĕn'shŭn* [F. *dimension*—from L. *dimensĭōnem*, a measuring—from *dis*, *mētĭŏr*, I measure: It. *dimensione*]: measured extent or size of a body; capacity or bulk; extent.—In geometry, a line whether straight or curved, has only one dimension, or measurement—namely, length; a surface has two—length and breadth; a solid has three dimensions—length, breadth, and thickness, or depth. These three measurements or dimensions determine all forms of extension.—In algebra, the term dimension is applied in much the same sense as *degree*, to express the number of literal factors that enter into a term. Thus, x^2, xy, $2ab$, are all of two dimensions, or of the second degree; x^3, x^2y, abc, $\frac{a^2bc}{d}$, are of three dimensions, etc. DIMEN'SIONED, a *-shŭnd*, having dimensions.

DIMEROUS, a. *dĭm'ér-ŭs* [Gr. *dis*, twice; *mĕros*, a part]: in *bot.*, composed of two pieces; having parts arranged in twos.

DIMETER, a. *dĭm'ĕ-tér* [Gr. *dis*, twice; *mĕtron*, a measure]: having two poetical measures.

DIMETRIC, a. *dī-mĕt'rĭk* [Gr. *dis*, twice; *mĕtron*, a measure]: said of crystals when they have axes of two kinds, the vertical being unequal to the lateral.

DIMIDIATE, a. *dĭ-mĭd'ĭ-āt* [L. *dimidĭŭm*, the half]: half; in *bot.*, split into two on one side, as the calyptra of some mosses; seemingly imperfect, as a stamen whose anther has only one lobe, or a leaf whose limb is fully developed on one side of the mid-rib, and scarcely at all on the other. **Dimidiation**, in *heraldry*, mode of marshalling arms, adopted chiefly before quartering and impaling according to the modern practice came into use, and subsequently retained to some extent in continental though not in English heraldry. It consists in cutting two coats of arms in half by a vertical line, and uniting the dexter half of the one to the sinister half of the other. Coats of husband and wife were often so marshalled in England in the 13th and 14th c. Mr. Planché traces the double-headed eagle of the German empire to a dimidiated coat, with half an eagle for the e., and another half for the w. empire.

DIMINISH, v. *dĭ-mĭn'ĭsh* [F. *diminuer*—from L. *diminu'ĕrĕ*, to break into small pieces; *diminu'tus*, broken into small pieces—from *dis*, *minŭō*, I lessen]: to make smaller by breaking off a piece; to lessen; to make or become less or smaller; to impair; to appear less; to abate; to subside. **Dimin'ishing**, imp. **Dimin'ished**, pp. *-ĭsht*. **Dimin'ishable**, a. *-ă-bl*, capable of being reduced in size. **Dimin'isher**, n. one who. **Dimin'ishingly**, ad. *-lĭ*. **Diminuen'do**, n. *-ū-ĕn'dō* [It.]: in *music*, gradual lessening of the sound from loud to soft; it can be applied to a single note, when it is a long note, as well as to a passage of many notes. It is so nearly of the same meaning as decrescendo, that it is frequently marked with the same sign, thus >. **Dim'inu'tion**, n. *-ĭ-nū'shŭn* [F.—L.]: the act of lessening or making smaller; the state of becoming or appearing less; decrease. In *heraldry, diminution* sometimes denotes indifferently, differences, marks of cadency, and brisures. **Dimin'utive**, a. *-mĭn'ū-tĭv*, small; little; contracted; narrow: N. a word expressing a little thing of the kind. **Dimin'utively**, ad. *-lĭ*. **Dimin'utiveness**, n. the quality of being diminutive; want of bulk; smallness.—**Syn.** of 'diminish': to abate; decrease; liquidate; reduce; degrade; abase; subtract;—of 'diminution': decay; deduction; abatement; reduction; abasement; inaccuracy; defect.

DIMIN'UTIVES: forms of words, chiefly of substantives, in which the primitive notion has become lessened or diminished, as *hillock = a little hill*. With littleness is associated the idea of neatness, and also of needing protection; hence diminutives are used as terms of endearment; sometimes they imply contempt. There is perhaps no language without diminutives; and the most common method of formation is by the addition of a syllable. This, however, is not the only method; *tip* from *top*, by attenuating the vowel, and *kid* from *goat*, are as genuine diminutives as *hillock*. The commonest of the English diminutive affixes are *ock*, *kin*, *el*, or *le*, which are of Gothic origin, and *et* or *let*, of classical origin; as in *bullock*, *lambkin*, *kernel* (little corn), *lancet*. According to Dr. Latham, the termination *ling*, or rather *ing*, was originally patronymic; 'Ida was the son of Eoppa,' was expressed in Anglo-

Saxon by *Ida wæs Eopping.* From the notion of the filial relation, the transition is easy to that of littleness and endearment, as in *darling, duckling.* Contempt predominates in *shaveling* (a monk) and others.

Diminutives occur often in proper names: *Perkin* is the diminutive of *Peter, Jenkin* of *John.* These have settled down into permanent and distinct names; but in the language of fondness and familiarity, *Charles* becomes *Charley, John, Johnny,* etc. In Lowland Scotch, this form of diminutive is not confined to proper names, but is applied to every object, animate or inanimate—*laddie, horsie, wifie, firie.* Sometimes one diminutive affix is joined to another, as *lassock, lassockie;* and in expressions like *a wee, wee bit horsikie,* the diminution is carried to the fifth degree. It is principally in the mouths of the people and in friendly familiarity that these diminutive forms are common; and some languages and dialects are rich in them beyond others. Italian is remarkable in this respect, especially the Tuscan dialect: *casa,* house, becomes *casarella,* little house, and *casarellina,* pretty little house; from *fratello,* brother, which is itself a diminutive of the Lat. *frater,* children, it is said, may be heard forming such fond names as *fratellinucciettinetto.* The affectionateness and bonhomie of the Germans expresses itself largely in this form; *vater,* father, becomes *väterchen,* dear father; and even the pronoun *du,* thou, is made into *duchen,* and *duli.*

Diminutives are not confined to nouns: *whitish* is the diminutive of the adjective *white;* and *tipple, scribble, dandle* are examples of diminutive verbs. Opposed to diminutives are AUGMENTATIVES, which abound in the Romanic languages, especially in Italian, and express not only largeness, but coarseness and vulgarity; *casotta* is a large house; *cavallaccio,* a worthless horse Our word *balloon,* which is of foreign origin, is of this form, and means a large ball. Such words as *drunkard, braggart, buzzard,* seem to be genuine English augmentatives.

DIMISSORY, a. *dĭm′ĭs-sėr-ĭ* [L. *dimissōrĭŭs,* giving leave to go before another judge—from *dimissus,* sent away, dismissed—from *dis,* away; *missus,* sent: It. *dimissorio*]: granting leave to depart; that by which a man is dismissed to another jurisdiction. LETTERS DIMISSORY, the authority given by his own bishop to a candidate for holy orders to be ordained by the bishop of another see.

DIMITY, n. *dĭm′ĭ-tĭ* [Gr. *dimitos,* made with a double thread—from *dis,* twice; *mitos,* a thread—originally a stuff woven with double threads—with as much probability derived from *Damietta,* Egypt, where presumed to have been first made]: stout figured cotton-fabric, with the figure or stripe raised on one side, and depressed on the other, so that the two faces present reversed patterns. D. is commonly white, or of a single color; but variegated dimities are now made, the pattern and the ground of different colors.

DIMORPHANDRA, n. *dī-mawr-făn′dra* [Gr. *dimorphos,* two-formed; *anēr,* a man, used by modern botanists for a stamen]: genus of *Cæsalpinieæ*, typical of the tribe *Dimorphandreæ*.

DIMORPHANTHUS, n. *dī-mawr-fănth'ŭs* [Gr. *dimorphos*, two formed; *anthos*, a flower: so named because there are flowers of two kinds, some producing seeds while others do not]: genus of the order *Araliaceæ*. *D. edulis* is employed in China as a sudorific.

DIMORPHINA, n. *dī-mawrf'ĭ-na* [Gr. *dis*, twice; *morphē*, form]: a hyaline foraminifer, in which the early chambers have the alternate growth of a Polymorphina, and the later ones the linear arrangement of a Nodosaria.

DIMORPHISM, n. *dī-mŏr'fĭzm* [Gr. *dis*, twice; *morphē*, a form]: the property of certain salts to assume two different forms of crystallization; in *bot.*, the occurrence of the same species of plant in two states. DIMOR'PHOUS, a. *-fŭs*, or DIMOR'PHIC, a. *-fĭk*, having the quality of dimorphism; in *bot.*, assuming two forms—in flowers, having long stamens and a short pistil in one, while in another there is a long pistil and short stamens, etc., but differing in no other appreciable way. In *chem.*, applied to a substance having the property of crystallizing in two distinct forms or systems: see CRYSTALLOGRAPHY. Thus, sulphur, as found crystallized naturally, and as obtained by the spontaneous evaporation of its solution in bisulphuret of carbon, or in chloride of sulphur, presents itself in crystals of the form of octohedra, with a rhombic base, and thus belongs to the *prismatic system;* but when sulphur is heated to fusion, and then slowly cooled, prismatic crystals of an amber color are obtained, which belong to the *oblique system*. The latter form of sulphur is not permanent, and the crystals gradually become opaque, and pass into the form of numberless octohedra. In their turn, the octohedral crystals, when kept at a temperature of 230° F. for some time, pass into the prismatic form. Carbon is another illustration of *dimorphism*. Thus carbon crystallizes in the diamond in the regular system as the octohedron and allied forms; while in the condition of graphite or Black Lead (q.v.), as obtained by the cooling of its solution in fused cast iron, it is in the form of hexagonal crystals belonging to the rhombohedral system. Carbonate of lime and iodide of mercury also are good examples of dimorphism. Some substances, such as the sulphate of nickel, sulphate of zinc, crystallize in three different systems, and are thus *trimorphous*.

DIMPLE, n. *dĭm'pl* [Lith. *dumbu*, to be hollow: Fris. *dobbe*, a ditch, a hole]: a small natural hollow or depression in the cheek, chin, or other part of the face: V. to mark with small cavities. DIM'PLING, imp. DIMPLED, pp. *dĭm'pld.* DIM'PLY, a. *-plĭ*, full of dimples or small depressions.

DIMYARY, n. *dĭm'ĭ-ăr-ĭ* [Gr. *dis*, twice; *mūōn*, a muscle]: a bivalve mollusk, in which the shell is closed by two adductor muscles: ADJ. of or pertaining to.

DIN, n. *dĭn* [imitative of continued sound: Icel. *dynia*, to resound; *dinr*, a din: Dan. *dön*, a rumble: L. *tinnīrĕ*, to sound as a bell]: a confused continued noise; a continuous loud rattling or rumbling sound: V. to stun or confuse with noise; to annoy or harass with noisy or discordant sounds. **DIN'NING**, imp. **DINNED**, pp. *-dĭnd.*

DINABURG, *dē'nâ-bôrch:* town in the govt. of Vitebsk, Russia, on the Düna river, 57 m. n.w. of Drissa, 120 m. s.e. of Riga, on the railroad connecting Warsaw with St. Petersburg and another leading to Riga. It is an important military position, strongly fortified, has valuable manufactures of leather, lumber, flour, brick, lime, and tiles, and ships large quantities of lumber, tallow, flax, and hemp. Pop. (1881) 52,261.

DINAGEPORE (*Dinajpur*): district in the Rajshahye division (Kuch Behar) of Bengal; 4,118 sq. m. The people are almost entirely rural, and mainly of aboriginal descent—of the stock that occupied India before the Sanskrit people invaded it. The Mussulmans slightly outnumber the Hindus. The country is flat, its only eminences being mere undulations; and, from proximity of the Himalayas, the whole tract is little but a network of water-courses, many of the channels, however, becoming periodically dry. The winds are more variable than is usual elsewhere in India, and hailstones are occasionally of such weight as to kill men and cattle. Rice is the principal crop, and fish are singularly plentiful. Pop. (1881) 1,514,346.

DINAGEPORE, *dē-nâj-pôr* (*Dinájpur*): capital of the dist. of D. in Bengal; 260 m. n. of Calcutta. It is watered by an offset of the Attree, called the Purnabada, which, through the Mahanunda, enters the Lower Ganges from the left. The place is devoid of architectural pretensions.

DINAN, *dē-nŏng':* very old town of France, dept. of Côtes-du-Nord, on the Rance, 30 m. n.w. of Rennes, 14 m. s. of St. Malo. The situation of D., on the summit of a steep hill of granite, with the Rance flowing through a valley 250 ft. below, is very romantic. It is surrounded by old walls pierced by four gates, and was formerly defended by a strong castle, part of which has been converted into a prison. In the older district, the streets are crooked, narrow, and steep, many of the buildings being crazy constructions of wood; but in some parts, its overhanging houses, and arcades resting on carved granite pillars, present many picturesque architectural features, attractive to the antiquary and the artist. The cathedral of St. Sauveur is a beautiful ornate edifice, in the Romanesque style, containing the heart of the famous French warrior Bertrand du Guesclin. D. has manufactures of fine linen and of sail cloth, of cotton and woolen goods, beet-root-sugar, etc. It has also some barge-building yards, and, owing to its position near the mouth of the Rance, has a good coasting and inland trade. Pop. 8,000.

A few miles off lies the village of Corseult, built on the ruins of the capital of the ancient Curiosolitæ. In the fields round about the village are still occasionally found ancient utensils, Roman coins, and traces of a temple dedicated to Mars.

DINANT, *dē-nŏng′* or *dē-nănt′:* town of Belgium, province of Namur, 14 m. s. of the city of Namur; on the Meuse, in the midst of extremely picturesque scenery. The most noteworthy buildings of D. are the church of Notre Dame, an ancient and richly decorated Gothic structure, and the town house, once the palace of the princes of Liége. D. has several salt-refineries, mills for sawing marble, some quarries of which are worked in the vicinity, paper-mills, breweries, and tanneries. It has also manufactures of woolen-stuffs, paper, hats, cards, and cutlery. The gingerbread of D., composed of rye-flour and honey, is famous, and has an extensive sale. D., which dates from the 6th c., has suffered greatly from frequent sieges. In 1466, Philip Duke of Burgundy attacked it with a strong army, and, when the town was taken, in retaliation for the hanging of the messengers whom he had sent to summon the town to surrender, he ordered 800 of the inhabitants to be tied in couples, back to back, and cast into the Meuse. At this time, also, the town was burned, and the walls levelled. Pop. abt. 7,000.

DINAPORE, *dē-na-pōr′* (*Dánápur*): civil and military headquarters of the dist. of Patna in Bengal; on the right bank of the Ganges, 10 m. above Patna. It is divided into two parts, the Cantonment and the Nizamat. In the mutiny of 1857, D. acquired an unenviable notoriety. On July 25, nearly 11 weeks after the commencement of the outbreak, the native troops, consisting of three regiments, rose against their officers, and that in the presence of a European force, which, if well handled, was as able, as it was ready, to crush them. After escaping with comparatively little loss, the insurgents clinging instinctively together, carried on a desultory warfare on their own account with various success. See ARRAH. Pop. (1881)—inclusive of a garrison of nearly 15,000—numbers 37,893.

DINARIC ALPS, *dę-năr′ĭk:* branch of the Alpine system connecting the Julian Alps with the w. ranges of the Balkan. It extends in a s.e. direction, from Mount Klek, e. of Fiume, to the mouth of the Narenta; and stretching along the borders of the Adriatic, it spreads its ramifications through the greater part of Croatia, Dalmatia, and Herzegovina. The D. A., the highest summits of which are Mount Dinara and Mount Prolok, seldom exceed 7,000 ft. in height. The range is principally calcareous.

DINDIGUL, *dĭn-dĭ-gŭl′:* town in India, in the British dist. of Madura, presidency of Madras, at the extremity of the valley of D., on a feeder of the Cauvery, 247 m. s.w. of Madras city. It is 880 ft. above the level of the sea, on a gentle declivity; the streets are wide, the houses well built, and the bazaar plentifully supplied. Since 1875 it has been connected by rail with the other chief towns of the presidency. The fort is on a wedge-shaped mass of gneiss, which rises to a height of 280 ft. The ascent is on the e. side by a flight of stone steps, the other sides being nearly perpendicular. Near the summit, there is a well of great depth, popularly reputed unfathomable, which yields excellent water. Pop. about 14,000, of whom 12,000 are Hindus, 1,500 Mohammedans, and 50 Christians.

DINE, v. *dīn* [F. *dîner*, to dine—from OF. *disner*—from mid. L. *disnārĕ*, to dine: AS. *dynan*, to feed: It. *desinare*, to dine: L. *desĭnĕrĕ*, to leave off—*lit.*, to leave off labor in order to partake of food]: to take the principal meal of the day; to give a dinner to. DI'NING, imp. DINED, pp. *dīnd*, having eaten a dinner. DINNER, n. *dĭn'nėr*, the principal meal; an entertainment; a feast. DIN'NERLESS, a. having no dinner. DINNER-TABLE, table at which the dinner is taken. DINNER-TIME, the hour at which dinner is taken. TO DINE WITH DUKE HUMPHREY, to go without a dinner—said to have arisen from the practice of persons without means to dine, walking about St. Paul's where Duke Humphrey was supposed to be buried. *Note.*—Dr. Mackay suggests a derivation of DINNER, from Gael. *dinnear*, a dinner—from *dion*, protection, thus denoting a protection or fortification against hunger: Diez and Littré say, F. *dîner* may be a corruption of L. *di-cœnārĕ*, to sup a second time, whence OF. *disner*, to dine.

DING, v. *dĭng* [an imitative word: Icel. *dengia*, to hammer: Dan. *dænge;* Sw. *danga*, to bang, to thump]: to strike; to knock; to dash with some degree of violence. DING'ING, imp. DINGED, pp. *dĭngd*. DING-DONG, an imitation of the sound of repeated blows on a metallic body, as a bell.

DINGHY, or DINGEY, n. *dĭng'gĭ* [Beng.]: in *East Indies*, a common name for a boat.

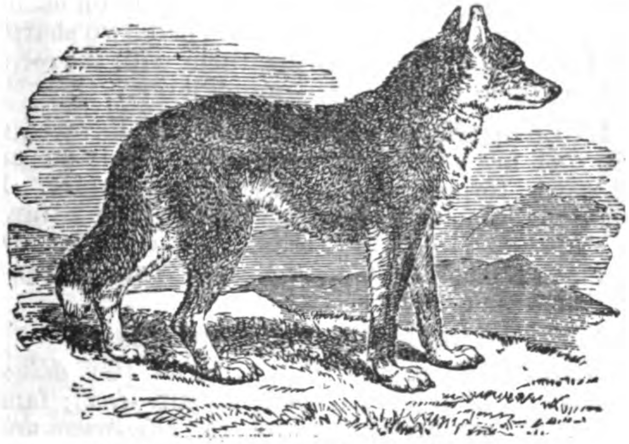
DINGLE, v. *dĭng'gl* [Gael. *dinn* or *dun*, a hill, and *glac*, a hollow: Lith. *dumbu*, to be hollow: comp. *dimple* (see DEN)]: a narrow valley; a glen; a hollow on the side of a hill.

DINGLE, *dĭn-gl:* seaport, most westerly town in Ireland; in county Kerry, in a hollow on the n. side of Dingle Bay, near the w. end of a mountainous peninsula (30 m. by 7); 39 m. w.n.w. of Killarney. It consists chiefly of one street, and has an antique aspect, some of the present houses having been built in the 16th c., in the Spanish style, with stone balconies, etc. The chief exports are corn and butter to Liverpool. D. was incorporated in 1585. It the 17th c., it had much trade with Spain, exchanging tanned hides, Irish friezes, woolen stockings, salt beef, salmon, and butter, for wines and spices. Pop. (1881) 1,833.

DINGLE BAY: indentation of the Irish coast, on the w. of Kerry, between Brae Head, Valentia Isle, on the s., and Dunmore Head and Blasket Isles, on the n., from which points, 18 m. apart, it runs 24 m. e.n.e., narrowing to 7 miles. The harbor of Dingle is a landlocked creek in the bay, admitting ships of 300 tons up to the town of D., and forming a retreat from the prevalent west winds of Dingle Bay.

DINGLE-DANGLE, ad. *dĭng'gl-dăng'gl* [imitative (see DANGLE)]: hanging loosely; in a careless pendent manner.

DINGO, n. *dĭng'gō* (*Canis Dingo*): the native dog of Australia, regarded by some naturalists as a distinct species, by others as a mere variety of *Canis familiaris.* It exists both in a wild and in a domesticated state; but there is no good reason for thinking that the wild race has originated from dogs introduced from some other country by man. The domesticated D. is about the size of a shepherd's dog, the wild one is larger. The wild D. is found in all parts of Australia. It is of a tawny color, has a large head, with muzzle somewhat fuller than the shepherd's dog. The ears are short and erect, the tail bushy, but not so bushy as that of a fox. In running, the D., unlike dogs in general, carries the head high, the ears erect, and turned forward. In a wild state, it does not bark. It is very destructive to the sheep of the colonists, and its delight is to kill as many as possible before proceeding to eat. It is very fierce and courageous, but capable of strong attachments.



Dingo, or Australian Dog (*Canis Dingo*).

DINGWALL, *dĭng'wall:* royal and parliamentary burgh, county town of the united counties of Ross and Cromarty, in the s.e. of Ross-shire, Scotland, at the head or s. w. end of the Cromarty Firth, 11 m n.w. of Inverness. In Scandinavian, D. means Law or Court Hill; and in Gaelic, it is called Inverpheoran. It consists chiefly of a long street, and lies low, on what was formerly a swamp, amid rich, fertile, and well-wooded ground, at the entrance to the beautiful valley of Strathpeffer, the famous sulphureous springs of which are five m. west. A short canal admits vessels drawing nine ft. of water up to the town, where there is a station of the Highland railway, also of the Dingwall and Skye railway. Its prosperity depends on agriculture. Near D. is a vitrified fort, on a conical hill, and there are traces of an ancient castle, where the earls of Ross held their courts. Pop. (1881) 1932, many speaking Gaelic, though all understand, and usually speak, English.

DINGY, a. *dĭn'jĭ* [Ger. *dumpfig*, dead in sound, musty: Dut. *dompig*, dark, close: a supposed dim. of *dung*, thus *dung-y*, soiled with dung]: dusky; brown; soiled; of a dark color. Din'giness, n. *-jĭ-nĕs*, a dusky or dark hue.

DINGY: see Dinghy.

DINICHTHYS, or Deinichthys, *dī-nĭk'thĭz:* remarkable fossil fish found in Ohio in a mass of rock of the Devonian age; believed to have been the largest fish of that formation. Prof. J. S. Newberry, of Columbia College, New York, has described it in his *Structure and Relations of Dinichthys* (1875), as being from 15 to 18 ft. long, 3 ft. thick, with head 3 ft. long, jaws 2 ft. long, and central dorsal shield 2 ft. in diameter. Some specimens were without ordinary teeth, but their jaws closed up on each other like the parts of scissors, while others had two sharp front teeth. Prof. Newberry connects them with the *coccosteus*, but believes them to have been much larger.

DINKELSBÜHL, *dĭnk'ĕls-bül:* town of Bavaria, on the Wernitz, 44 m. s.w. of Nuremburg. It is an ancient walled town, formerly a free city of the empire. It has important manufactures of hosiery, coarse linen, straw hats, paper, etc.; and a dye-work, brewery, and mills. D. suffered much during the Thirty Years' War. Pop (1880) 5,186.

DINNER: see under Dine: also, see Meals.

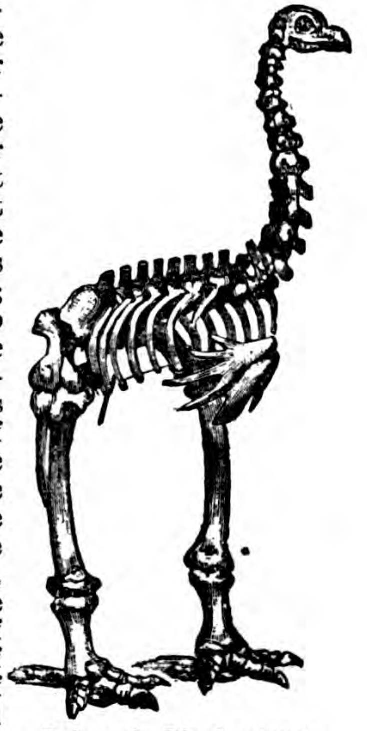
DINOBRYINA, n. plu. *dī-nō-brĭ-ī'na* [Gr. *deinos*, terrible; *bruon*, a kind of sea-weed; L. suf. *-ina*]: family of *Infusoria*. It comprises two genera, *Dinobryon* and *Epipyxis*.

DINOCHARIS, n. *dī-nō'kăr-is* [Gr. *deinos*, dreadful; *charis*, grace]: genus of *Rotatoria*, belonging to the family *Euchlanidota*. They have a single cervical eye.

DINOCRATES, *dī-nŏk'ra-tēz:* Greek architect, eminent in the time of Alexander the Great, to whom he proposed to cut Mount Athos into a statue of the conqueror, holding a city in one hand, and in the other a basin into which all the waters of the mountain should empty themselves. Alexander rejected this project as chimerical, but employed D. in the rebuilding and beautifying of Alexandria, B.C. 332. Under Ptolemy Philadelphus D. began to build a temple in honor of Arsinöe, in which he intended to suspend a statue of the queen by means of loadstones, but he did not live to complete the undertaking. He is also credited with having rebuilt the temple of Ephesus after it was burnt by Erostratus.

DINOPHIS, n. *dīn-ŏf'is* [Gr. *deinos*, strange, dreadful; *ophis*, a snake]: genus of *Ophidia*, formed for the reception of a gigantic constricting serpent from the tertiary rocks of the United States.

DINORNIS, or Deinornis, n. *dī-nŏr'nĭs* [Gr. *deinos*, terrible; *ornis*, a bird]: genus of large birds of the tribe *Brevipennes* (q.v.), of which no species is now known to exist, but of which the bones have been found in New Zealand, in the most recent deposits, in the sand of the seashore, in swamps, in the soil of forests, in river-beds, and in caves; and concerning which, with other large birds nearly allied (*Palapteryx* and *Aptornis*), traditions are still current among the natives, rendering it probable that they continued to inhabit New Zealand, if not to the 18th, at least to the 17th c. The name by which these birds are known in the traditions of New Zealand is *Moa*. They are said to have been decked in gaudy plumage, for the sake of which they were objects of pursuit, as well as for their flesh, which was much esteemed. They are also described as having been stupid, fat, and indolent birds, incapable of flying, living in forests and mountain-fastnesses, and feeding on vegetable food. With all this, the inferences deduced from their bones by comparative anatomists perfectly agree. These bones are not properly fossil or mineralized. but retain great part of their animal matter. It is even thought not impossible that some of the smaller species of D. may yet be found alive; of the larger ones, this can no longer be hoped. And these much exceeded in size any existing bird, some of the bones being at least twice the size of those of the ostrich; but the body seems to have been more bulky in proportion, and to have more resembled that of the dodo, though the legs were long, and *D. giganteus* must have stood at least (ten ft. and a half in height). The framework of the leg is the most massive of any in the class of birds, and the bones are remarkable for the solidity of their structure. The toe-bones of *D. elephantopes* almost rival those of the elephant.

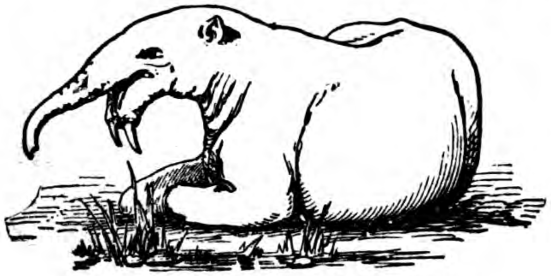


Deinornis Elephantopes.

The number of bones of D. which have been found is great; several species have been distinguished, and an almost complete restoration of skeleton has been effected. The first bone ever seen by a naturalist—a bone of the leg—was brought under the notice of Prof. Owen, 1839; and it is worthy of being borne in mind, that from that one bone he assigned to the D. its true place in the system of nature. and pointed out some of the most important characters which are now most fully proved to have belonged to it.

DINOSAURIA, or Deinosauria, n. plu. *dī-nō-saw'rĭ-a*, or Dinosau'rians [Gr. *deinos*, terrible; *sauros*, a lizard]: order of extinct lizards, found in the lias, oolite, and wealden, and disappearing in the lower cretaceous beds. They were gigantic reptiles, with a structure approaching nearer to the mammalian type than any other of their class. Their bodies were supported, at a considerable height, on four strong limbs, and the sacrum was composed of five amalgamated vertebræ. The principal genera are Megalosaurus (q.v.), Iguanodon (q.v.), and Hylæosaurus (q.v.).

DINOTHERIUM, or DEINOTHERIUM, n. *dī-nō-thē'rĭ-ŭm* [Gr. *deinos*, terrible; *theriŏn*, a wild beast]: remarkable extinct animal, the cranial bones of which are found in the Miocene formations of Germany, France, etc. The animal was provided, like the elephant and the walrus, with a pair of long tusks; but these projected from the end of the lower jaw, which is deflected downward at a right angle to the body of the jaw. In addition to the two tusks, there were five double-ridged grinders on each side of both jaws. The nasal cavity is large, apparently supplying attachment for a trunk, as in the elephant. No body or limb bones have yet been found so associated with those of the skull, as to show that they belonged to the same animal. Hence the true position of the D. has not been satisfactorily determined. Cuvier and Kaup have referred it to the neighborhood of the tapir, supposing it to have been an inhabitant of large lakes. We give a fig. of Kaup's restoration. De Blainville, on the other hand, makes it a herbivorous cetacean, like the manatee.



Restored Form of Dinotherium.

DINT, n. *dĭnt* [imitative of the sound of a blow: Icel. *dynta*, to shake up and down, to dint; *dyntr*, a dint: Sw. *dunt*, a stroke; *dunta*, to strike]: a blow; power exerted; effort; force; mark or cavity made by a blow: V. to strike so as to make a small hollow. DIN'TING, imp. DIN'TED, pp. BY DINT OF, by the force or power of.

DIOCESAN, n. *dī-ŏs'ĕ-săn* [F. *doicèse*—from mid. L. *diocēsĭs*—from Gr. *dioikēsĭs*, management of a household, a jurisdiction—from *dia*, through or over; *oikos*, a house—*lit.*, one who has the management of a household]: a bishop, viewed in relation to his own clergy or flock; one who holds a diocese: ADJ. of or belonging to a diocese. DIOCESAN COURTS: see CONSISTORY: COMMISSARY.

DI'OCESE [F.—from Gr. *dioikesis*, administration; and *dioikeo*, I govern]: the territory over which a bishop exercises ecclesiastical jurisdiction. The term occurs as early as the time of Cicero, as the special designation of districts in Asia Minor. In the organization of the Roman Empire introduced by Constantine the Great, the designation diocese was applied to the larger divisions, which were subdivided into provinces. About the middle of the 5th c., the dioceses of the empire were: the East, Egypt, Asia, Pontus, Thrace, Macedonia, Dacia, Illyria, Italy, Africa, Gaul, Spain, and Britain. The dioceses were governed some by Prefects, some by Proconsuls, and others by Vicars. The provinces were under Rectors. The government of the Christian religion, as established by Constantine, was adapted to this division, and the term diocese and others passed over to ecclesiastical matters. At first, a diocese meant the collection of churches or congregations under the charge of an archbishop. The name came afterward to be applied to the charge of a bishop, which had previously been called a parish. England and Wales are divided ecclesiastically into two provinces, viz., Canterbury and York, the former being presided over by the primate of All England, and the latter by the primate of England. Each of these is subdivided into dioceses, and these again into archdeaconries, rural deaneries, and parishes. A diocese is synonymous with the see of a suffragan bishop. See BISHOP.

DIOCLEA, n. *dī-ŏk'lĕ-a* [named after *Diocles* Carystinus, an ancient Greek botanist]: genus of papilionaceous plants, typical of the sub-tribe *Diocleæ*.

DIOCLETIANUS, *dī ō-klē-shĭ-ā'nŭs*, VALERIUS, Emperor of Rome: 245–313 (ruled 284–305); born in humble life near Salona, in Dalmatia. He inherited from his mother, Dioclea, the name of Diocles, which he afterward enlarged into D., and attached as a cognomen to Valerius, a name of the most patrician associations. He adopted a military career, and served with distinction under Probus and Aurelian, accompanied Carus on his Persian campaign, and finally, on the murder of Numerianus having been discovered at Chalcedon, he was proclaimed emperor 284 by the army on its homeward march. The suspected assassin of Numerianus, the prefect Arrius Aper, D. slew with his own hands, in order, it is alleged, to fulfil a prophecy communicated to him, while still a lad, by a Druidess of Gaul, that he should accede to a throne as soon as he had killed an *aper* (wild-boar). In 285, D. commenced hostilities against Carinus (the joint-emperor with the deceased Numerianus), who, though victorious in the decisive battle that ensued, was murdered by his own officers, thus leaving to D. the undisputed supremacy. His first years of government were so molested by the incursions of barbarians, that, in order to repel their growing aggressiveness, he took to himself a colleague—namely, Maximianus—who, under the title of Augustus, became joint-emperor 286. D. reserved for himself the charge of the eastern empire, and gave the western to Maximian. Still the attacks of the barbarians continued as formidable as ever. The empire was menaced by the Persians in the e., by the Germans and other barbarians in the w.; and, to provide for its permanent security, D. subjected it to a still further division. In 292, Constantius Chlorus and Galerius were proclaimed as Cæsars, and the distribution of the Roman Empire was now fourfold: D. taking the East, with Nicomedia as his seat of goverment; Maximian, Italy, and Africa, with Milan as his residence; Constantus, Britain, Gaul, and Spain, with Trêves as his headquarters; Galerius, Illyricum, and the entire valley of the Danube, with Sirmium as his imperial abode. It was upon his colleagues that most of the burden of engaging actively in hostilities fell, as D. seldom took the field in person. Among the conquests, or rather re-conquests, that were made under his rule, may be enumerated that of Britain, which, after maintaining independence under Carausius and Allectus, was, in 296, restored to the empire; that of the Persians, who were defeated, and compelled to capitulate in 298; and that of the Marcomanni, and others of the northern barbarians, who were driven beyond the Roman frontier. D., after 21 years' harrassing tenure of government, desired to pass the residue of his days in tranquillity, 305, May 1, accordingly, he abdicated the imperial throne at Nicomedia, and compelled his colleague, Maximian (much against the latter's will), to do likewise at Milan, D. sought retirement in his native province of Dalmatia, and for 8 years resided at Salona (see SPALATO), giving his time to philosophic reflection, to rural recreation, and to horticultural pursuits Two years before his abdication, he was instigated by his colleague, Galerius, to that determined and sanguinary persecution of the Christians for which his reign is chiefly memorable.

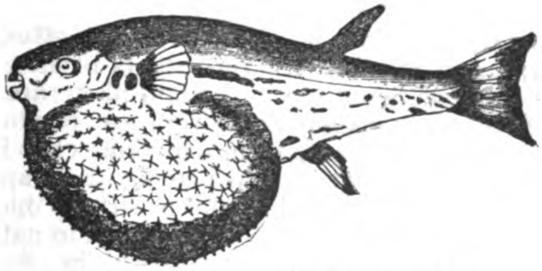
DIOCTAHEDRAL, a. *dī-ŏk-ta-hē'dral* [Gr. *dis*, twice; Eng. *octahedral*]: having the form of an octahedral prism with tetrahedral summits.

DIODATI *dē-o-dâ'tē*, JEAN: 1576–1649; b. Geneva: Swiss theologian. He belonged to a noble Italian family, originally of Lucca. His progress in letters was so rapid, that Beza caused him to be appointed prof. of Hebrew at the age of 21. In 1608, he became a pastor of the Reformed Church, and in the following year, prof. of theology. About this time, he endeavored to spread the doctrines of the reformation in Venice and other cities of Italy, but without success. In 1614, he went to Nîmes, where he preached three years; and in 1618, he was sent to the synod of Dort, to represent the Genevese Church. Here his talents were so highly estimated that he was one of the divines appointed to draw up the articles of the synod. He died at Geneva. D. was a somewhat intolerant Calvinist; but as a preacher, he was eloquent, persuasive, and conscientious. His Italian translation of the Bible appeared 1607; his French, 1644. Among his other works are *Annotationes in Biblia* (1607), *De Fictitio Pontificiorum Purgatorio* (1619), and *De Justa Secessione Reformatorum ab Ecclesia Romana* (1628).

DIODIA, n. *dī-ŏd'ĭ-a* [Gr. *dia*, through; *hodos*, a way: so named because many of the species grow by the roadside]: genus of plants, consisting of trailing shrubs or herbs, belonging to the order *Rubiaceæ*.

DIODON, *dī'o-don* [Gr. two-toothed]: Linnæan genus of fishes, now giving its name to a family, *Diodontidæ* (*Gym-*

nodontes of Cuvier), of the order *Plectognathi.* The fishes of this family have no distinct teeth, but their jaws, which are shaped like the beak of a parrot, are covered with a substance like ivory, formed of the teeth consolidated together. This is reproduced as fast as it is worn away by use, and the mouth is admirably adapted for grinding down the crustaceans and sea-weeds on which these fishes feed. Their flesh is mucous, and that of some is regarded as poisonous. None of them are used for human food. Some of them, particularly of the genera D. and *Tetraodon,* have a remarkable power of inflating their bodies by filling their stomachs with air, the stomach being extremely dilatable, and assuming a globular form when distended, whence they have received the name GLOBE-FISH, while from the spines, which stand out in all directions, like those of a hedgehog when rolled up, as if for defense of the inflated body, some of them have been designated PORCUPINE FISH. When distended with air, they float in the water with the back downwards, but are not incapable of swimming in this position, as was formerly supposed. The *Diodontidæ* are fishes of warm seas; one or two species are occasionally wafted by the currents to more northern shores.—The SUNFISH belongs to this family. The name D. has recently—with the effect only of confusion—been given to a new genus of cetaceous animals, of which one very rare species has occurred on the British coast.



Globe-fish (*Tetraodon lævigatus.*)

DIODON'TIDÆ, n. plu.: see DIODON.

DIODORUS SICULUS, *dī-o-dō'rŭs sĭk'ū-lŭs:* Greek historian in the times of Julius and Augustus Cæsar: b. at Agyrium, in Sicily. Little is known of his life beyond what is told by himself. He travelled in Asia and Europe, and lived long in Rome, collecting the materials of his great work, the compilation of which occupied 30 years. This work, the *Bibliotheca* or Library, was a history of the world, in 40 books, from the creation to the Gallic wars of Julius Cæsar. It was divided by the author into three parts—the first of which, in six books, comprises all the Greek and foreign myths down to the Trojan war; the second, in 11 books, contains the history from B.C. 1184, to the death of Alexander the Great; the third, in 23 books, continues the narrative of events from that date to B.C. 60. Of the *Bibliotheca,* the first five books are extant entire; the next five books are wholly lost; the next ten are complete, and of the remainder of the work, considerable fragments have been preserved. Had D. possessed any powers either of criticism or of arrangement, his work would have been of the greatest importance; but he was in both respects so deficient, that his history has no practical value beyond what belongs to an immense mass of raw, and now scarcely available material. His narrative is colorless and monotonous, and his diction, generally clear and simple, holds a sort of middle place between the pure Attic and the colloquial Greek of his time. The best editions of D. are Wesseling's (Amst. 1746), the Deux-ponts' (1793–1801), Dindorf's (1831, new ed. 1868), and Bekker's (1854).

DIŒCIOUS, a. *dī-ēsh'ĭ-ŭs* [Gr. *dis*, twice; *oikos*, a house]: in *botany*, a term applied either to plants or flowers, when not only the flowers but the individual plants are unisexual —i.e., when male and female flowers are produced upon separate plants. D. plants form a distinct class in the Linnæan sexual system; but in thus placing them apart, if the principle of arrangement had been strictly maintained, great violence would often have been done to natural affinities; D. species frequently occurring in genera and families usually *Monœcious* (q.v.) or *hermaphrodite;* also monœcious and hermaphrodite species in those usually diœcious. Familiar examples of D. plants may be seen in most species of willow. Among cultivated plants, hemp, spinach, and the date-palm, may be instanced. DIŒCIA, n. plu. *dī-ēsh'ĭ-ă*, the class of plants in the system of Linnæus defined by this character. DIŒCIOUSLY HERMAPHRODITE, *dī-ēsh'ŭs-lĭ*, in *bot.*, having flowers which are hermaphrodite, but none having both stamens and pistils perfect—thus one flower may have the stamen perfect while the petals are imperfect, and so *vice versâ*.

DIOGENES, *dī-ŏj'ė-nēz*, THE CYNIC: B.C. abt. 412–323; b. Sinope, in Pontus: philosopher. His father, Icesias, or Icetas, a banker by occupation, was convicted of having swindled, and so the young D. had to leave Sinope. His youth had been that of a spendthrift and a rake; but on coming from Sinope to Athens, he became interested in the character of Antisthenes, by whom, however, his first advances were repelled. In spite of his inhospitable reception, D. renewed the attempt to find favor with Antisthenes; but though often driven away by blows, his perseverance at last prevailed; and Antisthenes, moved with compassion, consented to admit him as a pupil. D., from being an extravagant debauchee, plunged into the opposite extreme of austerity and self-mortification. He would roll in hot sand during the heat of summer; in winter, he would embrace a statue covered with snow. His clothing was of the coarsest, his food of the plainest. His bed was the bare ground, whether in the open street or under the porticoes. His permanent residence (if such it could be called) was a tub which belonged to the Metroum, or the temple of the Mother of the Gods. His eccentric life did not, however, cost him the respect of the Athenians, who admired his contempt for comfort, and allowed him wide latitude of comment and rebuke. Practical good was the chief aim of his philosophy; for literature and the fine arts he did not conceal his disdain. He laughed at men of letters for reading the sufferings of Ulysses, while neglecting their own; at musicians who spent in stringing their lyres the time which would have been much better employed in making their own discordant natures harmonious; at savans for gazing at the heavenly bodies, while sublimely incognizant of earthly ones; at orators who studied how to enforce truth, but not how to practice it. He was seized by pirates on a voyage to Ægina, and carried to Crete, where he was sold as a slave. When asked what business he was proficient in, he answered: 'To command men.' His purchaser was Xeniades of Corinth; but the slave soon came to rule the master, acquired his freedom, was appointed tutor to the children, and spent his old age as one of the household. It was here that he had his interview with Alexander the Great. The king opened the conversation with: 'I am Alexander the Great,' to which the philosopher answered: 'And I am Diogenes the Cynic.' Alexander then asked him in what way he could serve him, to which D. rejoined: 'You can stand out of the sunshine.' Alexander is said to have been so struck with the Cynic's self-possession, that he went away, remarking: 'If I were not Alexander, I should be Diogenes.' In spite of his early excesses and his subsequent privations, D. lived at Corinth till the age of 90.

DIOGENES APOLLONIA, *dī-ŏj'ė-nēz ăp-ol-lō'nĭ-â:* abt. B.C. 500; b. Apollonia, Crete: philosopher. He was a pupil of Anaxagoras, taught philosophy at Athens, teaching that air was the first principle of all things, wrote a work on cosmology of which Diegenes Laertius preserved a fragment. and frequently exercised his abilities in the service of the great men of his time, who employed him either in the framing of new laws, or in the drafting of treaties.

DIOGENES LAERTIUS, *dī-ŏj'ė-nēz la-er'shŭs:* author of a biographical history of the Greek philosophers, seems to have been born at Laerta, in Cilicia, and to have taken his surname from that town. So little is known of his personal history, that the period at which he lived is a matter of doubt. By some it is assigned to the end of the 2d, and by others to the middle of the 3d c. after Christ. His name has been kept alive by his *Lives of the Philosophers*, a work which contains a great mass of interesting information regarding the private lives and habits of the most eminent philosophers of antiquity. Though the work is utterly worthless in respect of plan, coherence, or criticism, it yet contains so many piquant anecdotes, and so many valuable quotations from lost works, that Montaigne's wish was justifiable—that instead of one Laertius, we had had a dozen. The best editions of Laertius are those of Hübner (1831) and Cobet (1850).

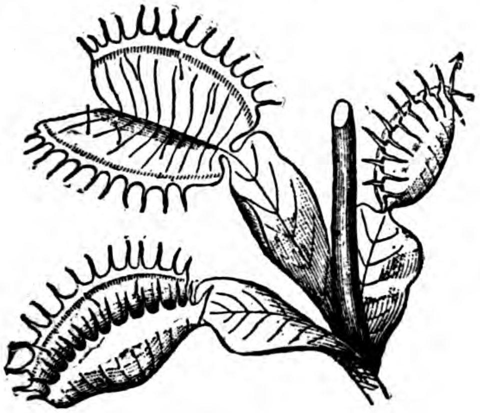
DIOME'DEA: see ALBATROSS.

DIOMEDE ISLANDS, *dī'o-mēd:* group about the middle of Behring's Strait, form, as it were, a number of stepping-stones between the most easterly point of Asia, and the most westerly of America. Their names are Fairway, Crusenstern, and Ratamanow; their central point is in lat. 65° 46′ n., and long. 168° 55′ west.

DIOMEDES, *dī'o-mē'dēz:* in legend bravest, after Achilles, of all the Greeks who took part in the Trojan war. His exploits occupy a prominent place in the record of the heroic deeds sung by Homer in the *Iliad.* He vanquished in fight Hector and Æneas, the most valiant of the Trojans; and even Mars and Venus, when they took the field on the Trojan side, were attacked and wounded by him. In the games instituted by Achilles in honor of Patroclus, he gained the prize in the chariot-race, and worsted the mighty Ajax in single combat. In company with Ulysses, he carried off the Palladium, on which the fate of Troy depended. On returning to Argos (to the crown of which he had succeeded after the death of Adrastus), he found that his wife had proved unfaithful in his absence. Leaving home, he went, according to one tradition, to Italy, where he took part with the Trojans against Turnus. Several cities on the s. shores of that country claimed him as their founder. It was another mythical D., king of the Bistones in Thrace, a son of Mars, who fed his mares on the flesh of men, and who was slain by Hercules, who then gave D.'s flesh to the mares.

DION, *dī'on,* OF SYRACUSE: b. in that city near close of the 5th c. B.C., assassinated there abt. 353: famous for having overthrown the power of Dionysius the Younger. He was related by marriage to Dionysius the Elder, enjoyed much favor at court, and became very wealthy. On the accession of Dionysius the Younger he was banished from Sicily, took refuge in Greece, and lived there till despoiled of his wife and his fortune by the young tyrant. He then collected a body of troops, sailed from Zacynthus 357, and landing on Sicily in the absence of Dionysius, took possession of Syracuse, and repulsed an attack by the troops from the citadel on the island of Ortygia. D. proclaimed liberty to the citizens of Syracuse, but they, incited soon afterward by Heraclides, drove his troops and himself from the city. The troops of Dionysius then attacked the city, set it on fire, and began a massacre; when the citizens urged D. to return, and he, hastening at the first alarm, defeated the soldiers of the tyrant, obtained full control of the city, and put Heraclides to death. Within a few months a conspiracy was formed against him and he was killed.

DIONÆA, n. plu. *dī'ō-nē'ă* [*Diōnæa,* Venus, being a patronymic from *Diōnē,* the mother of Venus; *Diōnē,* a name of Venus herself]: very curious and interesting genus of plants of the nat. ord. *Droseraceæ,* having a 5-partite calyx, 5 petals, 10–20 stamens, and one style, with 5 closely united stigmata. Only one species is known, *D. muscipula,* sometimes called VENUS'S FLY-TRAP and the CAROLINA CATCHFLY PLANT. It grows in marshy places in the warmer parts of N. America, as far n. as N. Carolina, and is a perennial plant, with a rosette of root-leaves from the midst of which arises a leafless stem (scape) about 6 inches high, terminating in a corymb of white flowers. It is remarkable for the irritability of its leaves. The leaf-stalk is elongated, winged, and leaf-like, and bears at its extremity an orbicular leaf, set round at the margin with stiff hair-like 'spines,' and having on its upper surface many small glands, and three delicate irritable hairs on each side, so placed that an insect can hardly traverse the leaf without touching one of them, when the two sides of the leaf immediately fold together upon it, and lay hold of it, the marginal bristles crossing one another, and preventing possibility of escape. The leaf does not open again till the whole substance of the insect has been absorbed by the plant, and nothing but the skeleton of the captive remains. For this purpose, the plant exudes a secretion of a character somewhat similar in its digestive properties to pepsine; and under the influence of this, the material of the insect capable of yielding nourishment to the plant, is digested, and ultimately absorbed by the same glands that secreted the fluid. This process of digestion and absorption sometimes occupies three weeks.—See *Insectivorous Plants*, by Charles Darwin (1875).



Venus's Fly trap (*Dionœa muscipula*).

DION CASSIUS COCCEIANUS, *dī'on kăsh'ĭ-ŭs kŏk-sē-yā'nŭs:* b. 155, at Nicæa, in Bithynia, where also he died at an unknown date: Gr. historian. He held various high offices of state under the Roman emperors, was twice consul, and had the intimate friendship of Septimius Severus. He is best known by his *History of Rome*, in 80 books, of which only 18 (36th to 54th) have reached us complete. The others are known to us only from fragments and abridgments. His high position gave him free access to the national archives, and as an authority on some points, especially on the imperial epoch of Roman history, his work is of considerable value. He wrote after the model of Thucydides, to whom, indeed, he is far inferior, both in vigor of judgment and acuteness of criticism; yet many passages of his History might be quoted as among the best samples of the rhetoric of the age in which he lived. The best editions of his history are those of bekker (1849) and Dindorf (1865).

DION CHRYSOSTOMUS, *dī'on krĭs-ŏs'to-mŭs* (Golden-mouthed): b. at Prusa, in Bithynia, toward the middle of the 1st. c.; died abt. 117: eminent Gr. rhetorician. His father, Pasicrates, gave great attention to his education, which was also enriched by travel. D., after residing some time in his native town, went to Rome, where he had the misfortune to excite the suspicion of the emperor Domitian, and was compelled to flee. On the accession of Nerva, A.D. 96, he returned to Rome, and was honorably received. Nerva's successor, Trajan, held D. in the highest estimation, even permitting him to ride beside himself in the imperial chariot. His excellent disposition procured him many friends, while his remarkable powers of oratory excited universal admiration. He died at Rome. D. left a very great number of orations, of which 80 are extant in the whole, with fragments of 15 others. They discuss questions in politics, morals, and philosophy, and are written in pure Attic Greek. According to Niebuhr, he was 'the first writer after Tiberius that greatly contributed toward the revival of Greek literature.' Good editions of D.'s orations are those of Reiske (Leip. 1784), Emperius (1844), and L. Dindorf (1857).

DIONYSIA: see BACCHANALIA: BACCHUS.

DIONYSIUS, *dī-o-nĭsh'ĭ-ŭs*, THE ELDER, Tyrant of Syracuse: B.C. 431 (or 430)–369. He was originally a clerk in a public office, but early showed a passion for political and military distinction. When the Agrigentines, after the conquest of their city by the Carthaginians, accused of treachery the Syracusan generals who had failed to relieve them, D. supported their accusations before the people of Syracuse, and induced the latter to appoint new commanders, of whom he himself was one. But in a very short time he supplanted his colleagues also, and, when only 25 years of age, made himself, by the help of his mercenaries, absolute ruler of the city. To strengthen his 'tyranny' (the name given by the Greeks to any *usurped* authority, however wisely and beneficently exercised), he married the daughter of Hermocrates, the late head of the aristocratic party, and thus attached the followers of that leader to himself. After he had fiercely suppressed several insurrections, and conquered some of the Greek towns of Sicily, he made preparations for a great war with the Carthaginians. It broke out B.C. 397. At first, fortune favored D., but after a short time he suffered a series of reverses, so calamitous, that all his allies abandoned him, and he was shut up in the city of Syracuse, apparently without hope of escape. When he was about to fall a victim to despair, a pestilence broke out in the Carthaginian fleet. D. took courage, and suddenly attacking his enemies by land and sea, obtained a complete victory. In B.C. 393 and 392, the Carthaginians renewed hostilities, but were defeated on both occasions, and D. was enabled to conclude a most advantageous peace. He now turned his arms against lower Italy, and B.C. 387, after a siege of 11 months, captured Rhegium. From this time he continued to exercise the greatest influence over the Greek cities of lower Italy, while his fleets swept the Tyrrhenian and Adriatic Seas. But D. was not contented with the reputation of being the first warrior and statesman of his age; he wished to shine as a poet also. He even ventured so far as to contend for the prize at the Olympic games, and about the end of B.C. 388, sent thither a splendid embassy, comprising the best reciters of the time, whose utmost skill, however, could not induce the judges to decide in his favor. D. was more successful at Athens, where he several times obtained the second and third prizes for tragedy, his last production obtaining even the first. He also invited many poets and philosophers to his court, his treatment of whom, however, was not always courteous. In B.C. 368, he renewed the war with the Carthaginians, whom he wished to drive out of Sicily altogether, but died in the following year, before he could accomplish his design. It was rumored that his death was hastened by his physician, at the instigation of his son. D. was unquestionably a most vigorous ruler, but unscrupulous as to the means for securing his ends, and tormented in his last years by the suspicion that he was surrounded with traitors.

DIONYSIUS THE YOUNGER: son of Dionysius the Elder: celebrated his entrance into public life, B.C. 367, by a splendid festival, which lasted 90 days. His political education had been designedly neglected by his father, and in consequence he grew up an indolent, pleasure-loving, and dissolute prince. Dion, a relative of his father, sought to improve him by the instructions of Plato, but his endeavors were frustrated by Philistus, the historian, who disgracefully encouraged the excesses of the youth. Dion was banished, but afterward returning to Sicily, expelled D. from Syracuse. The latter fled to Locri, the birthplace of his mother, Doris, where he was hospitably received. He repaid the kindness of the Locrians by making himself master of their city, which he ruled despotically for several years. B.C. 346, the course of events enabled him to return to Syracuse, but he could not firmly re-establish himself. His cruelties drove the citizens to ask the aid of the Corinthians against him. Timoleon was sent to their assistance, and D., shut up in the citadel of Syracuse, was compelled to surrender, B.C. 343. He was brought to Corinth, where he soon squandered his wealth, and died in obscurity and extreme poverty.

DIONYSIUS, or DENIS, King of Portugal: 1261, Oct. 9—1325, Jan. 7; b. Lisbon. He succeeded his father, Alfonso III., 1279, and shared the govt. with his mother till she favored the aspirations of a younger brother to the throne, when a quarrel ensued and his mother retired from the court. He married (1283) Elizabeth of Aragon, afterward canonized as St. Elizabeth, and instituted a thorough reformation of his kingdom. Among his measures were the promotion of industry and commerce, restriction of the power of the clergy, reorganization of the processes of civil and criminal justice, erection of over 40 fortified cities and towns, opening and working of various mines, planting the forest of Leiria which subsequently furnished the timber for the naval and marine service, and establishing the Univ. of Lisbon, and the milit. order of Christ.

DIONYSIUS OF ALEXANDRIA, SAINT, *dī-ō-nĭsh'ĭ-ŭs:* d. 265; b. Egypt. He belonged to a noble family, studied philosophy in early life, was converted to Christianity through reading the espistles of Paul, and became a student and disciple of Origen. He was ordained priest, chosen successor to Heraclas, head of the catechetical school of Alexandria, 232, and succeeded him as bp. of the church in Alexandria, 247. Soon afterward a persecution of Christians broke out, in which he was arrested, condemned to death, rescued by peasants, and concealed in the Libyan desert over a year. During the persecution of Valerian he was banished, 257; but the edict of Gallienus allowed him to return, 260. He was author of many pastoral letters and religious treatises.

DIONYSIUS OF HALICARNASSUS: learned critic, historian, and rhetorician: b. abt. middle of the century before Christ. He came to Rome B.C. 29, and resided there 22 years. D.'s most valuable work is unquestionably his *Archeologia,* a history of Rome and a mine of information about the constitution, religion, history, laws, and private life of the Romans. Of the 20 books of which it originally consisted, only the first 9 are extant complete, the 10th and 11th nearly so; and of the others, only a few fragments. There are editions by Hudson (1704), Reiske (1776), Kiessling (1870), and Schwartz (1877). His rhetorical works are of high literary merit, and include a *Censura Veterum Scriptorum*, an *Ars Rhetorica*, and a *De Compositione.*

DIONYSIUS, *dī-o-nĭsh'ĭ-ŭs*, THE AREOPAGITE: mentioned in the Acts of the Apostles (xvii. 34) as one of the few persons in Athens converted to Christianity by the apostle Paul. A history has been invented for him by ecclesiastical writers, which is interesting though without foundation. It is said that he was in Egypt at the time of the Crucifixion, and observing the eclipse that accompanied it, exclaimed: 'Either God himself is suffering, or he sympathizes with some one who is suffering.' At the time when Paul visited the metropolis of Greece, D. was a member of the council of the Areopagus, whence his name. Tradition also declares that the apostle installed him as the first bp. of Athens, and that he suffered the fate of a martyr. The writings falsely current under his name treat of such topics as the heavenly hierarchy, the names of God, the ecclesiastical hierarchy, etc. Their theology is of the mystical kind. The style, contents, and historic allusions clearly indicate that the author of these writings could not have lived before the close of the 5th c., and, in fact, the writings first made their appearance in the 6th c. Dazzling neoplatonic phantasies concerning the divine essence, angels, and holy spirits, splendid descriptions of the ceremonies of worship, glorifications of the priestly hierarchy, panegyrics on monastic life, and mystical interpretations of church doctrine, made the works immensely attractive, especially to the Greek monks, whose manner of life was pre-eminently contemplative. According to a recent hypothesis, the so-called writings of D. are the composition of some Christian Platonist, who, in opposition to the not yet wholly extinguished Gnosticism, sought to incorporate with Christianity the forms, ideas, and ceremonies of the Dionysian (Bacchic) mysteries. The translation of the work into Latin by Scotus Erigena, in the dawn of the middle ages, gave a new impulse to monasticism in the Western Church, and may be said almost to have created its mystic theology. The *Areopagitic Theology* was, in fact, the name given during the middle ages, and even as late as the 18th c., to that mystical method of apprehending religious truth made current by the writings ascribed to D., and afterward formally introduced into Latin Christianity by Hugo St. Victor in the 12th c. This theology proceeds upon the principle, that the Divine Spirit is indispensable even to the understanding of man.

DIONYSIUS EXIGUUS, *ĕks-ĭg-ū-ŭs:* called 'the little,' in reference either to his stature or to his great humility; b. in Scythia (near the Black Sea), but probably of Greek origin. He was living at Rome in the first half of the 6th c., either as abbot or monk, and died abt. 545. He was a great theologian and a profound astronomer, and published a collection of ecclesiastical canons. It was he who introduced reckoning of time by the Christian era: see CHRONOLOGY.

DIONYSIUS THRAX, *thrăks:* grammarian of the 2d c.; b. Alexandria. He taught at Rhodes and at Rome. His *Ars Grammatica*, published about 180, is the fountainhead of all grammar known in Europe; and no work on that science has exercised a wider or more lasting influence. See the edition by Uhlig (1884).

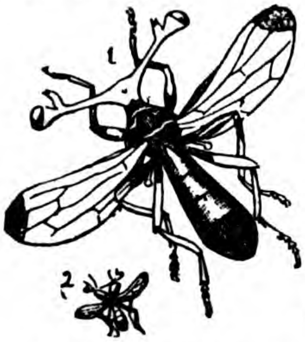
DIONYSUS: see BACCHUS.

DIOPHANTINE, a. *dī-o-făn'tīn:* of or pertaining to Diophantus (q.v.).

DIOPHANTINE ANALYSIS, *dī-ō-făn'tĭn an-ăl'ĭ-sĭs:* that section of the theory of unlimited or indeterminate problems which attempts to find rational and commensurable values answering to certain equations between squares and cubes. This class of problems was first and chiefly treated of by Diophantus (q.v.), whose name was given to the theory of their solution. The analysis is very subtle, and guided by few general rules. The difficulties of the solution of diophantine problems in most cases need to be overcome by the skill and ingenuity of the analyst. The following are examples of the problems solved by the Diophantine analysis: 1. To find two whole numbers the sum of whose squares is a square; 2. To find three square numbers in arithmetical progression; 3. To find a number from which two given squares being severally subtracted, each of the remainders may be a square.

DIOPHANTUS, *dī-ō-făn'tŭs:* Greek mathematician at Alexandria: according to some, about the middle of the 4th c.; according to others about the close of the 5th. His name first occurs in the life of Johannes Damascenus, by John, patriarch of Jerusalem 8th c. D. is commonly represented as the inventor of algebra, but he himself speaks of that science as known before his time. It is possible he may have been acquainted with Hindu algebra; at all events, according to De Morgan, there is very great similarity between the Hindu algebra and that of Diophantus. He occupied himself chiefly with the class of problems characterized as Diophantine (q.v.). Of his valuable work (the MS. of which was discovered in the 16th c.), *Arithmetica,* consisting originally of 13 books, only six have been preserved. Besides this a book on polygonal numbers is extant. The best edition is that of Fermat (Toulouse 1670); there is a German translation by Schulz (Berl. 1821).

DIOPSIDE, n. *dī-ŏp'sĭd* [Gr. *dia,* through; *opsis,* appearance—alluding to its occasional transparency]: a mineral, a foliated variety of augite, occurring in various shades of grayish green.



Diopsis Ichneumonia: 1, magnified; 2, natuaal size.

DIOPSIS, *dī-ŏp'sĭs:* genus of dipterous insects of the same great family with the house-fly, remarkable for the prodigious prolongation of the sides of the head, so as to form stalks for the eyes, which are thus removed to a distance from the body of the insect, almost equalling in some species the length of its wings. All the species are found in warm parts of the Old World.

DIOPTASE, n. *dī-ŏp'tās* [Gr. *dioptēs,* a looker through—from *dia, optomai,* I see]: a rare hydrous silicate of copper occurring in fine emerald-green crystals.

DIOPTRIC, a. *dī-ŏp'trĭk*, or DIOP'TRICAL, a *-trĭ-kăl* [Gr. ***dioptron***, something that can be seen through, an instr. for taking heights—from *dia*, *optŏmai*, I see]: assisting the sight in the view of distant objects; pertaining to the science of refracted light. DIOP'TRICS, n. plu. *-trĭks*, that branch of geometrical optics (see OPTICS) which treats of the transmission of rays of light from one medium into another, differing in kind. It consists of the results of the application of geometry to ascertain in particular cases the action of the laws of refraction. When a ray of homogeneous light is incident upon a surface, the angle which its direction makes with the normal or perpendicular to the surface at the point of incidence is in dioptrics, as in catoptrics, called the angle of incidence. The angle which the refracted ray makes with the same line is called the angle of refraction. This being premised, the laws of refraction may be stated: 1. The incident and refracted ray lie in the same plane with the normal, at the point of incidence, and on opposite sides of it: 2. The sine of the angle of incidence, whatever that angle may be, bears to the sine of the angle of refraction a constant ratio dependent only on the nature of the media between which the refraction takes place, and on the nature of the light. According to the second law, if we call the angle of incidence i, and that of refraction r, we shall have $\sin i = \mu \sin r$, where μ is a quantity depending upon the nature of the media and of the light. It will have, for instance, a certain value for refraction from vacuum into glass, another from glass into water, and so on; also it will have one value for red light, another for green, and so on. The quantity μ is called the refractive index, and is greater than 1 when refraction takes place from vacuum into a medium, and in general is greater than 1 when the refraction is from a rarer into a denser medium, and less than 1 when the opposite is the case. In dioptrics, the laws of refraction may be considered as depending for their truth upon experiment; in physical optics, they are deductions from a hypothesis respecting the constitution of light. They are not merely approximately true; they are absolute physical laws.

Before proceeding to consider the simpler leading cases of refraction, one or two interesting propositions in dioptrics require to be explained.—1. If the refractive index for a medium, when light is incident upon it from vacuum, be μ, and the index for another medium, under the the circumstances. be μ', then, when light proceeds from tne second medium into the first, the refractive index is $\frac{\mu}{\mu'}$. The proof of this proposition depends upon the two following experimental laws: (1) If a ray of light proceed from a point P, to another Q, suffering any reflections or refractions in its course, then, if it be incident in the reverse direction from Q, it will follow the exactly reverse course to P. This is proved by experiment, but may be accepted as axiomatic. (2) If a ray pass from vacuum

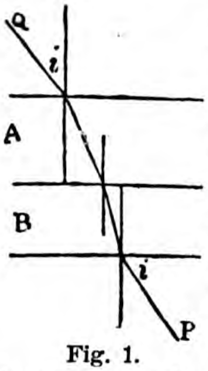


Fig. 1.

through any number of media, having their faces plane and parallel, when the ray emerges into vacuum its direction will be parallel to that which it had before incidence. To deduce the proposition from these laws, let i be the angle of incidence from vacuum upon the medium B (fig. 1), r the angle of refraction, which will also be the angle of incidence upon the medium A. Also let r' be the angle of refraction into A, which will also be the angle of incidence upon the second bounding surface of A. By the second of the preceding experimental laws, the angle of emergence into vacuum will be i. Hence we shall have by the first of these laws, $\sin i = \mu' \sin r$ at the first surface, and $\sin i = \mu \sin r'$ at the second. From these equations, we have $\sin r = \frac{\mu}{\mu'}$, $\sin r'$, which proves the proposition. It follows that if μ be the refractive index from vacuum into a medium, that from the medium into vacuum will be $\frac{1}{\mu}$.—2. A second proposition relates to what is called the *critical angle*. If i be the angle of incidence of a ray within a medium, the refractive index of which is μ, and r the angle of refraction into vacuum, then we have from the former proposition $\sin i = \frac{1}{\mu} \sin r$. From this formula, if i be given, r may be found, and a real value will be given to r so long as $\sin i$ is $< \frac{1}{\mu}$; but when i has a value greater than that determined by the equation $\sin i = \frac{1}{\mu}$, the formula fails to give us a value of r, for the sine of an angle cannot be greater than 1. And experiment shows that, in fact, there is no refracted ray when the angle of incidence is greater than that above assigned, the ray being wholly reflected within the medium. The angle of which the sine is $\frac{1}{\mu}$ is called the *critical angle*. For glass, it is about 41° 45′; for water, about 48° 30′. This angle is sometimes called the angle of *total reflection*. In internal reflection at the surfaces of media, the reflected light is more nearly equal in intensity to the incident than in any other case of reflection, While it thus appears that refraction from a denser into a rarer medium is not always possible, it may be added that it is always possible from a rarer into a denser.

We shall now investigate some simple cases of refraction: 1. And first of refraction at a plane surface. Let DIMN (fig. 2) be any medium bounded by a plane DI, and let R be a radiant point, and RD and RI two incident rays of a divergent pencil proceeding from R to the surface of the medium; then RD being perpendicular to the surface, suffers no refraction, but proceeds along DM within the medium; but RI is refracted in the direction IN, which, produced outward, meets the normal DF in F. Therefore, a small pencil of rays proceeding from R, and having RD, perpendicular to the surface, for axis, will be refracted into another pencil diverging from the imaginary focus F; for all the rays intermediate between RD and RI will converge very near F when the pencil is small. An eye within the medium, and between N and M, would thus, the pencil being small, see the luminous point R, as if it were at F, or further off than it really is. In the opposite case, represented in fig. 3, R being within the refracting medium, similar reasoning shows that after the rays emerge from the plane surface into the air, they will, if the pencil be small, appear to proceed from an imaginary focus F, nearer to the surface than R, the luminous point.

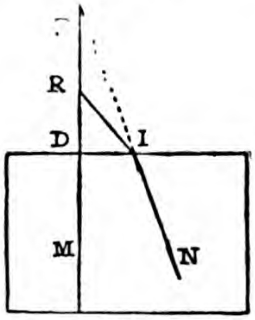


Fig. 2.

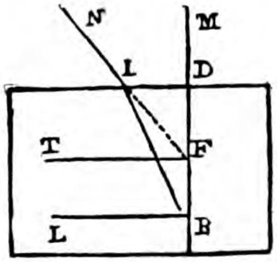


Fig. 3.

2. The case of refraction through a prism, which we are next to consider, is, in fact, the case of refraction through a medium bounded by plane surfaces which are not parallel. Conceive two planes at right angles to the plane of the paper, and making on that plane the figure BAC (fig. 4). The question is as to the laws of transmission of a ray, SPQR, of homogeneous light through the prism. Draw *mn'* and *n'n* perpendicular to the sides. Then *n'*PQ and *n'*QP are respectively the angles of refraction at the first, and of incidence at the second surface. Now, as *n'*QA and *n'*PA are each of them right angles, and as all the angles in the figure *n'*QAP are equal to four right angles, it follows that the angles at *n'* and at A together are equal to two right angles. But the angle at *n'*, together with the angles *n'*PQ and *n'*QP, are equal to two right angles; therefore must the angles *n'*PQ and *n'*QP together be equal to the angle at A. In other words, in refraction through a prism: *The sum of the angles of refraction at the first surface, and of incidence at the second, is equal to the angle contained between the plane sides of the prism.* From this it might be

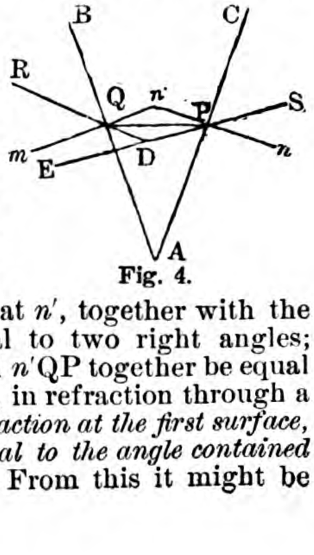


Fig. 4.

shown, that the deviation of a ray caused by passing through a prism is always toward the thicker part of the prism, if the medium be denser than the surrounding atmosphere. It is a geometrical proposition which the student may solve for himself, that if i be the angle of incidence at the first surface, and e that of emergence at the second, and if α be the angle of the prism, then δ, or the change of direction of the ray in its passage, is obtained from the formula $\delta = i + e - \alpha$.

3. We now take up the case of refraction at a single spherical surface of a medium denser than the surrounding air. And first, of parallel rays refracted at a convex spherical surface. Let ABQP (fig. 5) be the refracting medium, whose terminating convex surface is spherical, C being the centre of the surface, and V its vertex. Let XV be the axis of a pencil of parallel rays, of which any ray, RI, is incident at I. Then, if CIN be a normal, the angle of refraction, CIF, will be less than the angle of incidence, RIN, and the refracted ray will thus turn toward the axis, and meet it at some point, F. When the pencil is small, or the aperture, AVB, of only a few degrees, the rays will clearly nearly all converge to the same point, F. To find the position of F, we have, in the triangle ICF, the angle CIF $= r$, the angle of refraction, and ICF, the supplement of ICV or NIR (by parallel lines), i.e., of i, or the angle of incidence. Therefore, IF is to CF : : sin i is to sin r. And as for a very small pencil, IF may be taken = VF, we have FV : FC : : sin i : sin r, or : : μ : 1. And putting FV = F, the principal focal distance, and VC = R, we have $\mathrm{F} = \frac{\mu}{\mu - 1}\mathrm{R}$. If the medium be crown-glass, for which the value of μ is $\frac{3}{2}$, we have $\mathrm{F} = \frac{\frac{3}{2}}{\frac{3}{2} - 1}\mathrm{R}$, or F = 3 R; i.e., the principal focal distance is equal to three times the radius of the sphere. The student may, by similar reasoning, ascertain for himself the focus of parallel rays incident on a concave spherical refracting surface, as also the focus in the case of a pencil of parallel rays within the medium and emerging from it. The case of a divergent pencil is incapable of such elementary treatment as to justify its insertion here. For branches of the subject, treated under separate heads, see CAUSTIC: LENS: REFRACTION. Under REFRACTION, is a table of the values of μ—the refractive index for various media and kinds of light. See also SPECTRUM: CHROMATIC.

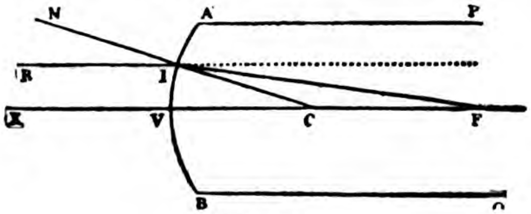


Fig. 5.

DIORAMA, n. *dī'ō-râ'mă* [Gr. *dia*, through; *horāma*, what is seen]: an exhibition of pictures on movable screens raised on a platform or stage, seen by the spectators sitting in a darkened room through a large opening (see PANORAMA). DI'ORAM'IC, a. *-răm'ĭk*, pertaining to.

DIORITE, n. *dī'ō-rīt* [Gr. *diŏros*, a boundary between]: hornblendic greenstone, so named from its being unmistakable in contradistinction to *dolorite* or *augitic greenstone*. DIORITIC, a. *dī'ō-rĭt'ĭk*, pertaining to diorite.

DIORTHOSIS, n. *dī-or-thō'sĭs* [Gr. *diorthoō*, I make straight—from *dia*, through; *orthoō*, I make straight]: in *surg.*, the reduction of a fracture or dislocated bone.

DIOSCOREACEÆ, *dī-ŏs-kō-rē-ā'sē-ē:* natural order of plants, of which the genus *Dioscorea* (see YAM) is type. They are twining shrubs, with large tubers either above or below ground. They are generally classed with endogenous plants; they are among the *Dictyogens* of Lindley. There are about 120 known species. The most important plants of the order are the different species of *Dioscorea* or YAM (q.v.). Black BRYONY (q.v.) is its only representative in the British flora. *Testudinaria elephantipes*, a s. African species, sometimes called *Elephants' Foot*, and *Hottentots' Bread*, has a large fleshy rhizome, with a rough cracked bark, which is used as food by the Hottentots in times of scarcity.

DIOSCORIDES, *dī-ŏs-kor'ĭ-dēz*, PEDANIUS, or PEDACIUS: Greek physician: b. Anazarba, or Anazarbus, in Cilicia; lived in the 1st or 2d. c. He accompanied the Roman armies as physician through many countries, and collected great store of information and personal observation on plants. In his great work, *De Materia Medica*, he treats of all then known medicinal substances and their properties, real or reputed, on the principles of the so-called 'humoral pathology.' Two other works bear the name of D., but their genuineness is very questionable. During 15 centuries, D. maintained undisputed authority in botany and in materia medica, and still holds it among the Turks and Moors. The best editions of D. are by Saracenus (Frankf. 1598), and Sprengel (2 vols., Leip. 1829). The *De Materia Medica* has been translated into the Italian, German, French, and Spanish languages. There is also an Arabic translation in MS. in various libraries of Europe.

DIOSCURI, *dī-os-kū'rī* (Gr. children of Jupiter): name usually applied to Castor and Pollux, twin brothers and offspring of Leda by Jupiter. Festivals in their honor, called *dioscuria*, were celebrated by the people of Corcyra and Lacedæmonia with great glee and athletic sports; and they were devoutly worshipped in Rome, where a magnificent temple was erected to them in the Forum. Castor was hailed as the god of equestrian exercise, Pollux of boxing, and both are represented in art mounted on prancing steeds, carrying spears, and wearing star-bound, egg-shaped helmets. The brothers were noted for their expedition to Attica to rescue their sister Helen from Theseus, their hunting of the Calydonian boar, participation in the Argonautic expedition, and their combat with the sons of Aphareus. One version of the myth is that Pollux and Helen, destined to be immortal, were born from one egg, and Castor and Clytemnestra, granted only mortal existence, from another. Castor was killed in the Aphareus combat, and Pollux prayed Jupiter that he might die also, that the brothers might not be separated. Different versions of the myth vary as to what became of the brothers. One says that Jupiter took mercy on the grief of Pollux, Homer narrates that Castor was restored to life on the condition that both brothers should spend alternate days in Hades, and another version claims that Jupiter placed them both together among the stars, where they now are the chief ones in the constellation of Gemini: see Castor and Pollux.

DIOS′MA: see Bucku.

DIOS′PYROS: see Date Plum: Ebony.

DIOTA, n. *dĭ-ō′ta* [L.—from Gr. *diōtos*, two-eared—from *dis*, twice, and *ous*, an ear]: a vessel used to contain water or wine. It had a narrow neck, a full body, and two handles, whence the name. The form and size varied, it was generally made tall and narrow, and terminated in a point, which could be set into a stand or into the ground, to keep the vessel upright, in which position several have been found in the cellars at Pompeii.

DIOTIS, n. *dĭ-ō′tĭs* [Gr. *diōtos*, two-eared; so named from the lobes of the corolla being ear-shaped]: genus of plants, belonging to the nat. ord. *Chenopodiaceæ*.

DIOXIDE, n. *dī-ŏks′īd* [Gr. *dis*, twice; and *oxide*]: in *chem.*, an oxide containing two equivalents of oxygen to one of another element: see Monoxide.

DIP, v. *dĭp* [AS. *dippan;* Sw. *doppa*, to dip, to soak Dan. *dyppe*, to dip, to plunge: Dut. *doppen*, and *doopen*, to dip, to baptize; *duypen*, to duck the head]: to put into water for a brief time and then to withdraw; to plunge into a liquid for a moment; to baptize by immersion; to take out, as with a ladle; to sink; to look slightly into, or here and there, as into a book; to incline downward: N. inclination downward; depression; in *geol.*, the inclination or angle at which strata slope downward into the earth; the amount or angle of dip is the degree of deviation from a level line or the plane of the horizon; the point of dip is the point of the compass to which the dip is directed—the word *rise* is used as the opposite of *dip;* in *magnetism*, downward inclination of the magnetic needle; a candle made by dipping the wick in tallow. Dip′ping, imp. Dipped, or Dipt, pp. *dĭpt.* Dipper, n. *dĭp′pėr*, the water-ousel. Dip of horizon, the angular depression of the horizon below the true or natural horizon as seen from an elevation above the surface of the earth; at sea, the angle through which the true or natural horizon is depressed by the elevation of the eye of the spectator above the surface of the sea (see Depression of the horizon). To dip into, to enter slightly upon a thing; to read partially.

DIPETALOUS, a. *dī-pĕt′ă-lŭs* [Gr. *dis*, twice; *petălon*, a petal]: in *bot.*, having two petals.

DIPHTHERIA, n. *dĭf-thē'rĭ-ă* or *dĭp-*, or **Diphtheritis**, *dĭf-thėr-ī'tĭs* [Gr. *diphthĕră*, skin, leather]: a disease characterized by the tendency to the formation of a leathery membrane in the throat and fauces. **Diph'therit'ic**, a. *-thĕr-ĭt'ĭk*, relating to, or connected with, diphtheria; tough; like leather.—Diphtheria is a virulent disease which has existed under different names from ancient times. It is believed to have been recognized before the time of Hippocrates, B.C. 460. Aretæus of Cappadocia, B.C. 100, described it under the names of *Ulcus Syriacum*, and *Malum Egypticum*. For several centuries during the dark ages it is not clearly described, and may not have been distinguished by the mystics of those times from other diseases. In later times it was described by Hecker as it prevailed in Holland as an epidemic in 1337, and it is not unlikely that the experience which the Dutch had at that time was the occasion of the initiation of those sanitary measures for which they have long been famous. D. has been called cynanche maligna, cynanche gangrenosa, putrid fever, malignant inflammation of the throat, and putrid sore throat. Dr. John Fothergill, celebrated London physician, wrote an excellent treatise upon it under the latter name, describing the epidemic which appeared in London 1745. There are few modern descriptions which excel it, and the remedies which he employed are similar to those recently found more efficacious than those in use 30 years ago. An American, Dr. Samuel Bard, Washington's family physician while the federal government was in New York city, gave a lucid description of the epidemic which appeared in New York 1771. His account is in the first vol. of the *Transactions of the American Philosophical Soc.*, and was afterward published in a pamphlet at the commencement of the war of 1812, not many years before his death.

Not much is said in medical writings between this time and 1818, when Bretonneau produced a sensation in the medical world by the publication of various papers on the subject in France, naming the disease *diphtheria*. Bretonneau contended that it was at first local, with the formation of a membrane, and that it spread from this by a process of incubation. Vogel ascribed the origin of the disease to the development of a fungoid microscopic organism, *oidium albicans*, and this opinion was prevalent for several years. This organism, however, has been found present in several other distinct affections, and it cannot now be regarded as having any peculiar connection with diphtheria. For the last 30 years careful examinations have been numerous, but it cannot at the present time (1888) be stated with any degree of positiveness what the particular organism or poison is which causes the disease. There is, however, no doubt about the fact of its being produced by putrescent matter, particularly that which contains intestinal discharges. Septic matter is its cause, but it is probable that this septic matter must be of a peculiar character, and that it is not engendered at all temperatures. Too high a degree of heat causes too active a putrefaction to produce the specific poison which causes D.; consequently, as a rule, the disease is more prevalent in the spring and fall, and even in mild winter than in the summer. Its progress, however, is always attended by the development of spherical bacilli or micrococci. Experiments recently made seem to show that infection may be received through the agency of solutions of putrefactive matter which are free from these organisms. A consideration of this fact, however, would only indicate that the germs of these organisms must be present in the fluid experimented with, notwithstanding that the microscope fails to reveal them, and that they are derived from parent organisms, because it has been demonstrated that the theory of spontaneous generation is false.

There is no question as to whether D. is a constitutional disease, but there is a difference of opinion as to whether the local manifestations precede, or follow, the constitutional or general affection. As has been stated, Bretonneau maintained that it was at first local. It has certainly been found that prophylactic measures, consisting in the use of gargles, mouth washes, etc., and general cleanliness, have a protecting influence against diphtherial infection, but the majority of physicians of to-day regard the disease as being in most instances, if not always, developed in the system before local manifestations are observed. The question is a difficult one. The fact that germicides prevent the disease proves only that septic matter is prevented from entering the system. It does not prove that the constitution would not be affected in advance of the local appearance of the diphtheritic membrane if the prophylactic measures were not taken, neither does it prove the contrary. Among the facts which seem to favor the belief that the disease is primarily constitutional are the following: It is frequently rapidly developed to an intense degree, after exposure such as ordinarily produces a 'cold' or other inflammatory attack. This indicates that the system is already charged with some morbid material which only awaits an exciting cause to set it in action. It is therefore probable that the diphtheritic germs have already entered the system through the agency of contaminated air or water, and have reached a stage of development which only needs a spark to kindle the flame of disease. Again, in answer to the statement that attendants upon diphtheritic patients are often attacked only a few hours after having received diphtheritic discharges upon some part of the mucous membrane—a statement made to show that the origin in this case is local—it is replied that instead of evincing such a fact, it rather indicates that the septic matter has been absorbed through the mucous membrane, and taken into the circulation before any actual local development has been made. This process would of course require less time than if an inoculating lesion of the membrane required to be formed first. If this view is correct it becomes a question whether the disease ever exists locally anterior to its constitutional development.

Symptoms.—They are local and constitutional; and in the order of observation the local may precede the constitutional, or the constitutional may appear first, or they may appear at the same time. The disease is a variable one, never running anything like a definite course, as do small-pox or measles, but is of the most lurking and treacherous nature. The patient may complain of general weariness, and of pain in the limbs; the pulse may be fluctuating and weak, or it may be regular and rapid; but is liable to great variation. There may be a feeling of soreness in the throat, and upon inspection it will be found congested, have a dark, purplish appearance, more or less tumefied, and showing greenish-white patches of exudation, sometimes covering only a small portion of the tonsilar or pharyngeal surface, but often of great extent and thickness. There is more or less difficulty in swallowing, owing to the obstruction caused by tumefaction, or sometimes to nervous insufficiency. Nausea and vomiting may be among the first symptoms, or these may come later. The exudation is liable to pass into the larynx and windpipe —more frequently in young patients than in those more advanced—and it may pass down the esophagus. Sometimes it forms in patches in the intestines, and, if the patient survives, it becomes detached and voided with the stools. Albuminuria usually accompanies both mild and severe cases. but lasts only a few days. In severe cases, where there is much exfoliation from the uriniferous tubules, the albuminuria may be permanent. In some cases, uremic poisoning of the blood may take place before well-marked symptoms of diphtheria appear. The temperature varies in different cases, and its variability forms one of the diagnostic symptoms, especially when taken in connection with the rapidity of the pulse. Sometimes, while the exudation is extending, the temperature, after having been as high as 101° or 102° F., will fall to the normal point, or even below, and the pulse will become irregular and weak. Then after a few hours, perhaps, both temperature and pulse will rise, the former sometimes to 104° or 105° F., and the latter to 120 to 140 beats per minute, and even more frequent in young patients. Whenever the pulse is irregular and intermitting, for one or two days, the prognosis is unfavorable. When the temperature falls while the membrane does not exfoliate, even when the patches are not extensive, an unfavorable result may be expected soon to supervene. This state of affairs evidences extensive blood and nerve poisoning, from which recovery can scarcely be expected. Another symptom of D. is swelling of the lymphatic glands, although it is not an invariable one, and does not always appear early. When the disease extends to the air passages, danger is imminent, and suffocation is threatened, as in croup.

Diagnosis.—In making the diagnosis it must not be supposed that D. is always attended by the formation of a false membrane, although the name implies it. The proper name for the disease is putrid fever, and bearing this in mind, will be of advantage in calling more particular attention to the more grave general symptoms. A form of sore throat, sometimes called diphtheritic sore throat often exists in company with cases of putrid fever or D., but it is not contagious and has not the peculiar general symptoms attending this dangerous disease. There will often be considerable febrile disturbance. The tonsils will be greatly enlarged and much congested, but the affection is to be considered as catarrhal pharyngitis. A very scrutinizing examination should, however, be made, and some of the remedies, particularly the topical ones in the form of sprays or gargles, used which are employed in diphtheria. It is distinguished from croup, when laryngeal symptoms appear, by the fact that the constitutional symptoms almost always precede the laryngeal ones; while in croup, the laryngeal attack is primary, and the exudation is upon the surface of the mucous membrane, while in D. it penetrates, as well as covers it. The peculiar crowing cough of croup and the hard and rapid pulse which appears at the commencement of the cough will admit of no mistake by an observant practitioner. For the difference in symptoms between the two diseases, see SCARLET FEVER. Erysipelas of the throat may assume some of the symptoms of D., but the condition of the tongue is different, being usually dry and cracked, the pulse fuller and more regular, and there is not that fluctuation in all the febrile symptoms. In fact, it may be stated that he who has attended many cases of D., can never be mistaken in the diagnosis of this disease.

Treatment.—As might be supposed from a consideration of the nature of the affection, D. is pre-eminently a disease which requires positive and aggressive treatment. By this we do not mean that kind of active treatment often applicable in highly inflammatory attacks, but that kind of positive treatment which recognizes the fact that a stealthy and relentless foe has to be encountered, more treacherous than any open enemy, and one which employs the most deadly poison for its weapon. Many inflammatory diseases are relieved by the powers of nature—by the '*vis medicatrix naturæ*'—but D. requires positive medication; the poison requires an antidote, and one capable of destroying it, otherwise the germs will multiply and either permanently injure the patient or destroy his life. There is considerable disagreement in regard to the use of local applications, and there is a marked difference in the results obtained. Those who favor the belief of Bretonneau that the disease is at first strictly local, are more apt to rely upon local remedies at the outset of the attack. Though the very great majority of practitioners have discarded the use of caustics and remedies designed to destroy the false membrane, there are a few who still cling to the practice, believing that if used ' in time ' and the exudation is removed, the greatest part of the danger at least, is removed. But it is the prevailing belief that the use of caustics only increases the danger by forming a surface which more readily allows the disease to further contaminate the system, and which is more difficult to heal than that which results from natural exfoliation. The usual practice is to gargle the throat with detergent washes, such as a solution of what is known as 'chloride of soda,' in the form of 'Laoarraque's disinfecting liquid,' diluted. This is an old remedy, and perhaps is advantageously replaced by other applications, but in many cases will be found of the greatest benefit, especially if used alternately with other applications. The best single application is probably a solution of carbolic acid in the proportion of from one to two drams of the pure acid to a quart of water. The remedy may be used in the form of a spray instead of a gargle, or it may be applied with a sponge probang. A fine spray is especially applicable in those cases where the exudation has entered the larynx and air passages. When carefully used the atomized particles are inhaled, and in cases where the exudation has not entered the larynx it may prevent such extension. When the spray or probang is used only by the medical attendant the throat may be gargled during the intervals of his visits. A saturated solution of chlorate of potash is beneficial as an application in mild cases and may often be used in conjunction with the more active remedies. Under the use of these applications the exudation is cast off in the course of a few days--sometimes in a few hours, in mild cases, leaving an apparently natural mucous membrane. Warm fomentations to the throat and neck are often of great benefit. The application of ice is recommended by some, but others doubt its beneficial action. Considering the fluctuating and asthenic nature of the disease, ice should at least be applied with great caution, if not reluctance. and the same remark may be made in regard to the use of ice internally. It must be remembered that we are not combatting simple inflammation, which, when it yields, is replaced by healthy action, but we have to deal with a poison which is liable to return to any part whence it is driven until it is expelled from the system. The sick room should be kept scrupulously clean and fumigated, or the air purified by some disinfecting vapor. The writer believes that the best agent for this purpose is the common chloride of lime, either exposed in a dry state in sufficient quantity to give a decided evidence of its presence, or in smaller quantities, with the addition of an acid to cause the disengagement of the chlorinated fumes. This compound has been found the most efficient germicide to mingle with the atmosphere in inhabited apartments. When substance contact is desired, as in washing or rinsing, a solution of carbolic acid will be found efficient, but the air cannot be sufficiently impregnated with the vapor of carbolic acid to make the infection ineffective, without rendering it unfit for respiration. The writer is convinced from experience in hospital wards where smallpox had been introduced that a liberal use of chloride of lime will destroy the floating germs of that disease and prevent its spread. In regard to internal remedies they should be of a tonic and supporting nature. In a majority of cases more or less alcoholic or vinous stimulation is to be commended, notwithstanding the opposition to it in some quarters. The disease has much of the nature of serpent poisoning, or of that in profound cases of typhoid, or what is known as typho-malarial fever, and is amenable to similar stimulating treatment. The alcoholic stimulus assists the nervous strength until the poison is eliminated. It will, for the same reason, assist in keeping up the glandular secretions, so important in the metabolism of the body. It may be given to the amount of a pint in 24 hours in the case of a robust man, or more, in some severe cases, in connection with raw or soft eggs or milk or beef-tea. Quinine may be used as a tonic with great benefit, and also the muriated tincture of iron. If both are given the quinine may be dissolved in the tincture and swallowed in some vehicle which more or less disguises the taste, or they may be given separately in capsules, or in mucilage. Chlorate of potash is a favorite internal remedy, and in *very* mild cases is nearly all the medication which is required, either internally or as an application, and in more severe cases may be advantageously used as an adjunct. Extreme, or profound cases, however, require medicines of much more power, and they must be administered with unremitting attention and prudence. Alkaline carbonates will be found useful. The sanitary surroundings of the locality often require attention beyond what they may have received from the public authorities. Drainage and sewerage of all kinds should be looked after, and carbolic acid and chloride of lime applied in the most efficient manner. The food of the patient should be nourishing, sometimes exceedingly bland and unirritating. Beef-tea, eggs, milk-punch, and similar articles are to be given, cautiously of course, but in quantities demanded by the great waste of strength and tissue.

DIPHTHONG, n. *dĭp'thŏng* [F. *diphthongue*—from Gr. *diphthonggos*, with two sounds—from Gr. *dis*, twice; *phthonggos*, a sound: L. *diphthongus*, a diphthong]: two vowels sounded together, or made to sound as one vowel, in the same syllable; the union of two vowels in one sound, as in *out;* in this combination the sound is really composed of an *a* as heard in *father*, and a *u* as heard in *put.* Many double vowels in English are not real diphthongs, there being only one sound heard. The spelling of the English language has little or no relation to the pronunciation in this matter. In many syllables written with two vowels, only one sound is heard, as in *bread.* The single vowel letters, again, often have a diphthongal sound; thus the long sound, as it is called, of *i* is really composed of the sound of *a*, as heard in *father*, and that of *e*, in *me.* Such words as *bread*, *field*, now monophthongs, were doubtless at one time real diphthongs, and are still so pronounced in many parts of England. DIPHTHON'GAL, a. *-thŏng'găl*, pertaining to a diphthong. DIPHTHON'GALLY, ad. *-lĭ.*

DIPHUCEPHALA, n. *dī-fū-sĕf'a-la* [Gr. *diphuēs*, of double nature or form; *kephalē*, a head]: genus of coleopterous insects. belonging to the family *Lamellicornes.*

DIPHYDES, n. *dī'fĭ-dēz*, or DI'PHYDÆ, *-dē*, or DI'PHYES, *-ēz* [Gr. *diphuēs*, of double nature or form]: genus of free, swimming *Hydrozoa*, belonging to the order *Siphonophora*-sub-order *Calycophoræ*, and typical of the family *Diphydæ*. It has two swimming-sacs, one placed as it were within the bell of the other.

DIPHYLLOUS, a. *dĭ-fĭl'lŭs* [Gr. *dis*, twice; *phullon*, a leaf]: having two leaves.

DIPHYODONT, n. *dĭ-fī'ŏ-dŏnt* [Gr. *dis*, twice; *phŭō*, I generate; *odontēs*, teeth]: one of those mammals which have two sets of teeth: ADJ. pertaining to.

DIPHYOZOOID, n. *dī-fĭ-o-zō'oyd* [Gr. *diphuēs*, of double nature or form; *zōon*, an animal; *eidos*, appearance]: one of the detached reproductive portions of adult members of that order of oceanic *Hydrozoa* called *Calycophoridæ*. They swim about by means of their calyx.

DIPHYSCIACEÆ, n. plu. *dī-fĭz-sĭ-ā'sē-ē* [Gr. *dis*, twice; *phuskion*, a kind of bean]: family of operculate acrocarpous mosses, having a capsule of very curious structure, being large, oblique, and gibbous; inflorescence monœcious. DIPHYSCIUM, n. *dī-fĭs'sĭ-ŭm*, genus of acrocarpous mosses, the type of the family *Diphysciaceæ*.

DIPLACANTHUS, *dĭp-la-kăn'thŭs:* genus of fossil ganoid fishes, peculiar to the old red sandstone, in which six species have been found. The body was covered with very small scales, and the tail was heterocercal. There were two dorsal fins, which with each of the other fins were furnished with a strong spine in front, the base of which was simply imbedded in the flesh, as in the dog-fish, and not articulated, as in the siluroids. The head was large, and the mouth wide, and opening obliquely.

DIPLAX, n. *dī'plăks* [Gr., double-folded]: genus of *Rotatoria*, belonging to the family *Euchlanidota*, and forming a connecting link between *Salpina* and *Dinocharis;* carapace cleft down the back, and destitute of spines back and front; foot and toes long and slender.

DIPLAZIUM, n. *dĭ-plāz'ĭ-ŭm* [Gr. *diplazō*, I double: so named because the indusium is double]: genus of *Polypodiaceæ*. The rhizomes of *D. esculentum* are occasionally eaten.

DIPLEIDOSCOPE, n. *dĭ-plī'do-skōp* [Gr. *diploos*, double; *eidos*, appearance; *skopeō*, I see, I view]: an optical instrument for indicating the passage of a heavenly body over the meridian by the coincidence of two images formed by a single and double refraction from a triangular prism which has one transparent and two silvered planes, one of the latter being in the plane of the meridian.

DIPLODACTYLUS, n. *dĭp-lo-dăk'tĭl-ŭs* [Gr. *diploos*, double; *daktulos*, a finger, a toe]: genus of lizards belonging to the family *Geckotidæ:* see GECKO.

DIPLODONTUS, n. *dĭp-lo-dŏn'tŭs* [Gr. *diploos*, double; *odous*, a tooth]: genus of *Arachnida* of the order *Acarina* and family *Hydrachnea*, having the mandibles terminated by a straight, acute, and immovable tooth, to which is attached a movable hook or claw.

DIPLOE, n. *dĭp'lō-ē* [Gr. *diplŏŏs*, double, twofold]: in *anat.*, the network of bone-tissue which fills up the interval between the two compact plates in the bones of the skull; in *bot.*, the cellular substance of a leaf.

DIPLOGRAPSUS, *dĭp-lō-grăp'sŭs:* genus of fossil zoophytes, differing from the Graptolite (q.v.) in having a double series of cells. They are found in great abundance in the anthracitic shales of the Silurian measures.

DIPLOGRAPTOLITES, n. plu. *dĭp'lō-grăp'tō-līts* [Gr. *diplŏŏs*, double, and Eng. *graptolite*]: in *geol.*, that section of graptolites in which the cells are arranged in two rows like the feathers of a quill.

DIPLOMA, n. *dĭ-plō'mă* [Gr. and L. *diplōma*, a letter folded double, a state letter of recommendation—from Gr. *diplŏŏs*, double: F. *diplôme*]: a parchment or formal writing, under seal, and signed by officials, conferring some privilege, honor, or power. The term originated in the ancient custom of writing solemn documents on two tablets of wax, which were doubled, or laid one upon the other (see DIPTYCH), or on writing material which was folded. The Roman emperor, were in the habit of giving diplomas to public servants, and to couriers, to enable them to procure the use of the public servants and horses; hence diploma came to signify a royal charter or prince's letters-patent. The term is now applied mostly to instruments given by universities and other learned societies, in proof of the holder having attained a certain degree; or to the licenses held by professional persons to practice their right. DIPLO'MACY, n. *-mă-sĭ*, the art and practice of negotiating state matters with foreign nations, and the forms usually employed; political skill; dexterity or astuteness in the management of any piece of business. DIPLO'MATE, v. *-māt*, to invest with a privilege, etc., by a diploma. DIPLO'MATING, imp. DIPLO'MATED, pp. DIPLO'MATIST, n. *-mă-tĭst*, one skilled in diplomacy; a statesman. DIPLOMATIC, a. *dĭp'lō-măt'ĭk*, or DIP'LOMAT'ICAL, a. *-ĭ-kăl*, pertaining to diplomacy; authorized by credentials or letters to transact business for a sovereign at a foreign court; pertaining to the foreign ministers at a court, who are called the DIPLOMATIC BODY. DIP'LOMAT'IC, n. an envoy or official agent. DIP'LOMAT'ICALLY, ad. *-lĭ.* DIP'LOMAT'ICS, n. plu. *-măt'ĭks*, the science of ancient writings, and the art of deciphering them, and determining their age and authenticity, etc : this term has latterly given place to the more descriptive term PALÆOGRAPHY (q.v.).

DIPLO'MACY: art of managing the intercourse and adjusting the relations between states or nations, as committed to ambassadors, envoys extraordinary, consuls, etc. The principles and rules of D. are embodied partly in those international customs and usages which constitute what may be called common, and in those treaties which may be regarded as statute international law. Ambassadors are not subject to the municipal laws of the states in which they reside, the theory being that they represent the persons of their respective masters, or are the personalization of their governments, and that these cannot be subject to any other laws than those of their own country. If an ambassador offends against the municipal law, or abuses his character, he may be sent home, and accused before his master. Though there was much doubt on the point, this rule seems to extend to crimes against natural law, e.g., murder, or *mala in se*, as well as to crimes artificially created by the policy of the particular state, *mala prohibita;* and it is now said that the case of Don Pantaleon Sa, the brother and secretary of the Portuguese ambassador to England, who was executed for an atrocious murder during the protectorate of Cromwell in 1654, was no exception, as he was not 'joined with his brother in the same commission.' See AMBASSADOR: EMBASSY. The arrangement of international ceremonies belongs to the subject of diplomacy. It involves some customary and conventional modifications of the general principle of international law by which all independent states are held to be equal.

Royal honors pertain to the empires and kingdoms of Europe, including the Swiss Confederation, the grand duchies of Germany, and, among Catholic states, the pope; and the same right extends to the United States. These honors, with other rights of greater importance, include the right of taking precedence of the others in all international ceremonials. Among those to whom pertain royal honors, the order of precedency, after much discussion, was left by the Congress of Vienna on the ancient footing of custom merely. The rule thus fixed is said to be the following: Monarchs having royal honors, but not being crowned heads, yield precedence to those who are crowned, while they take precedence over all other monarchs, demi-sovereigns, and rulers of dependent states. This rule leaves the relative rank of the crowned heads and other classes among themselves undetermined, and a curious expedient has been found for obviating the necessity of a minuter classification. By what is called the *alternat*, the rank and places of the various powers are changed from time to time in a certain order determined by lot. Thus, if there are several parties to a treaty, a corresponding number of copies is made of it, the name of each state being named first in the copy which it preserves, and the others in the order determined by the *alternat*. But the right to alternation has sometimes been a subject of contention. In 1742, it was refused to Prussia by Great Britain; and Hungary and Sardinia had great difficulty in obtaining it at the peace of Aix-la-Chapelle.

Under the laws of the United States all appointments of diplomatic officers are made by the pres. subject to confirmation by the senate; and the immediate superintendence of diplomatic relations is vested in the sec. of state. All regular and special communications to U. S. representatives abroad are sent from his office and all official correspondence from abroad is addressed to him. Should the pres., either branch of congress, or a committee thereof, desire information from, through, or about a member of the diplomatic service, the request is directed to the sec. of state, and he reports to the source of inquiry as soon as the information required can be ascertained. The service consists of 16 envoys extraordinary and ministers plenipotentiary, 4 ministers resident, 11 ministers resident and consuls general, 3 chargés d'affaires, and 21 consuls general. See AMBASSADOR. There are also 14 secretaries of legation, some of whom also combine the duties of a consul general, and others those of a chargé d'affaires in the absence of an envoy or minister, and 1,085 consuls, vice-consuls, vice and deputy consuls, consular agents, commercial and vice-commercial agents, and special consular clerks. Thirty foreign nations are represented at Washington by officers of various grades, and every civilized nation on the globe has consular or commercial agents in all the principal cities. The foreign ambassadors at Washington stand on an equal footing in their official relations to the U. S. govt., irrespective of their degree of rank in their own country. But in their social intercourse a pleasing precedent has been established, by which the senior representative in length of continuous service is honored with the unofficial title of 'dean of the diplomatic corps,' and on ceremonial or formal occasions where all the representatives are assembled, the dean is given the place of honor and recognized as the leader of the corps.

For maritime ceremonies, see the respective titles. They consist of salutes either with cannon, or with the flag or pendant, by furling it, lowering it, or pulling it down. There is also a salute with sails, which generally consists in lowering the foretopsail. Maritime ceremonials are usually made the subject of express compact, but, as a general rule, on the open seas, a ship carrying a pendant salutes a ship of a friendly power carrying an admiral, and detached ships generally salute fleets.

DIPLOMITRIDÆ, n. plu. *dĭp-lo-mĭt′rĭ-dē* [Gr. *diplŏŏs*, double; *anitrion*, dim. of *mitra*, a belt or girdle]: family of flowerless plants, order *Jungermanniaceæ* (scale mosses). DIPLOMI′TRIUM, n. *-mī′trĭ-ŭm*, an old order of flowerless plants, now made a synonym of Hollia.

DIPLOPAPPEÆ, n. plu. *dĭp-lo-păp′pē-ē* [Gr. *diplŏŏs*, double; *pappos*, the down on the seeds of certain plants, such as the dandelion]: sub-tribe of composite plants, tribe *Asteroideæ:* see ASTER. DIPLOPAPPUS, genus of composite plants, type of the sub-tribe *Diplopappeæ*.

DIPLOPERISTOMI, n. plu. *dĭp′lō-pĕr-ĭs′tŏ-mī* [Gr. *diplŏŏs*, double; *peri*, about; *stoma*, a mouth]: mosses which have a double peristome. DIPLOPERISTOMOUS, a. *dĭp′lō-pėr-ĭs′tŏ-mŭs*, having a double peristome.

DIPLOPODA, n. plu. *dĭ-plŏp′o-da* [Gr. *diplŏŏs*, double; *pous*, a foot]: order of *Myriopoda*, or centipedes, distinguished by having the two mandibles and the tongue so united as to form a large lower lip. The order is called also *Chilognatha*.

DIPLOPTERA, n. *dĭ-plŏp′tėr-a* [Gr. *diplŏŏs*, double; *pteron*, a wing]: a division of hymenopterous insects, comprising the three families *Eumenidæ*, *Masaridæ*, and *Vespidæ* (wasps, q.v.).

DIPLOPTERUS, *dĭp lŏp'tėr-ŭs:* genus of fossil ganoid fishes, four species of which have been discovered in the old red sandstone, and two in the carboniferous series. They have heterocercal tails, with double anal and dorsal fins, opposite each other, but having the dorsal pair a little apart. The head is large and flattened, and the teeth are fewer and larger than in the allied genera. The scales are perforated.

DIPLOSTEMONOUS, a. *dĭp'lō-stē'mŏ-nŭs* [Gr. *diplŏŏs*, double; *stēmōn*, the thread called the warp, *stēmŏnos*, of the warp—from *histēmi*, I cause to stand, the ancient looms being upright]: in *bot.*, having a double row of stamens, often double the number of the petals or sepals.

DIPLOSTYLUS, n. *dĭp-lo-stī'lŭs* [Gr. *diplŏŏs*, double; *stuios*, a pillar]: genus of a small shrimp-like crustaceans, from the coal formation of Nova Scotia.

DIPLOTAXIS, n. *dĭp-lo tăks'ĭs* [Gr. *diplŏōs*, double; *taxis*, arrangement]: genus of *Crucifera*, comprising about twenty species of herbaceous plants.

DIPLOZOON, n. *dĭp-lo-zō'ŏn* [Gr. *diplŏŏs*, double; *zōon*, an animal]: genus of *Entozoa*, family *Trematoda*, consisting of parasitical worms which infest the gills of the bream, carp, roach, etc , and have the appearance of two distinct bodies in a state of conjugation in the form of an X or St. Andrew's cross, the two bodies being of different sexes, soft, elongated, and flattened, and each terminated posteriorly by a transverse, oval, or almost quadrilateral expansion, furnished with four suctorial disks.

DIPNEUMONEÆ, n. *dīp-nū-mō'nē-ē* [Gr. *dis*, twofold; *pneumōn*, a lung]: a section of *Araneidæ*, or spiders, comprising such as have two pulmonary sacs.

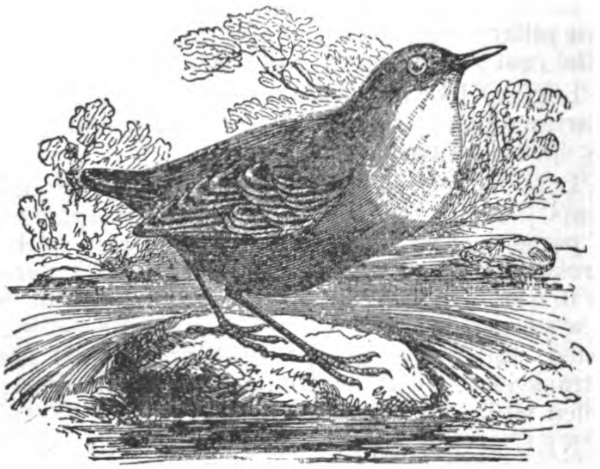
DIPNOI: see LEPIDOSIREN.

DIPODIDÆ, n. plu. *dĭ-pŏd'ĭ-dē* [Gr. *dis*, twofold; *pous*, a foot]: the jerboas (q.v.), a widely distributed family of hopping rodents.

DIP'PEL'S ANIMAL OIL, called also Empyreumatic Animal Oil, or Rectified Oil of Hartshorn: prepared by the destructive distillation of bones in close vessels, when BONE-BLACK (q.v.) is left on the retort or vessel. and the crude oil distils over into a suitable receiver. When obtained in this manner, it is a thick viscid oil of a brown color, and a very disagreeable odor, but on redistillation it may be obtained limpid and colorless. Air and light affect the pure or rectified oil, and render it colored and somewhat viscid. Its elementary constitutents are carbon, hydrogen, nitrogen, and oxygen, and it contains a number of volatile organic bases, such as analine, picoline, etc. Dippel's animal oil is a powerful medicinal agent, and when swallowed in doses of a few drops, it is antispasmodic, and stimulates the vascular and nervous systems. In large doses, it is a powerful irritant poison.

DIPPER, DIPPING, etc.: see under DIP.

DIP'PER (*Cinclus*): genus of birds of the thrush family (*Merulidæ*), distinguished from the other birds of that family by an almost straight, compressed, sharp-pointed bill, and still more by their manners and habits. They frequent clear pebbly streams and lakes, feeding chiefly on mollusks and on aquatic insects and their larvæ, which they seek even under water, diving with great facility, and moving about for a short time at the bottom of the water. They carry their rather short tail elevated after the manner of wrens, which they also resemble in their 'frequent becks' or dipping of the head, accompanied with an upward jerking of the tail. One species is found in Britain, the COMMON D., or WATER OUSEL (*C. aquaticus*), a bird rather smaller than any of the British thrushes, of a generally dark-brown color, with throat and upper part of the breast pure white. It is found throughout Europe and the north of Asia, but chiefly in hilly or mountainous districts. It is not gregarious. The D. never fails to attract notice, as it sits upon some stone in the midst of or beside the stream, its white breast rendering it conspicuous as it repeats the movement from which it derives its name. It builds a very curious nest of interwoven moss, domed and with the entrance in the side, usually in some mossy bank close by a stream, and often near or under a cascade. The assertion which has been made, that the D. walks without apparently muscular effort at the bottom of the water, is incorrect; its feet are not well formed for walking, and it moves under water by means of its wings—which are short—not without much muscular effort. The statement also often made, that it eats the spawn of salmon and other fishes, in the belief of which it is much persecuted in Scotland, has never been authenticated. Other species of D. are found in Asia and N. America. In Scotland, the D. is called the Water Crow.



Water Ousel (*Cinclus aquaticus*).

DIP'PING-NEEDLE: magnet swinging on a horizontal axis, to show the magnetic dip, i.e. the vertical angle which the magnet freely suspended makes with the horizon. If a magnetic needle be supported so as to be free to move vertically, it does not at most places on the earth's surface rest in a horizontal position, but inclines more or less from it. If the vertical plane in which the needle moves is the magnetic meridian of the place, the angle between the needle and the horizontal line is called the dip or inclination of the needle. Thus, if the needle, NS, be supported at its centre, C, so as to be free to move vertically, the plane of the paper being supposed to be that of the magnetic meridian, the angle NCa is the dip. The dip of the magnetic needle at any place can be ascertained with very great exactness by means of the dipping-needle, fig. 2. It consists of a graduated circle, AA, fixed vertically in the frame FF, and moving with it and the vernier V, on the horizontal graduated circle HH. This last is supported by a tripod furnished with levelling screws. At the centre of the circle, C, there are two knife-edges of agate, supported by the frame, and parallel to the plane of the circle. The needle, NS, rests on these knife-edges by

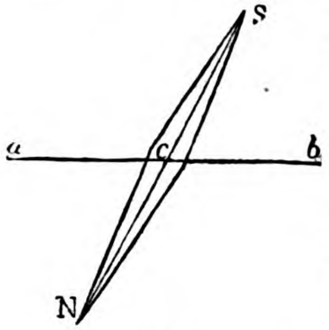


Fig. 1.

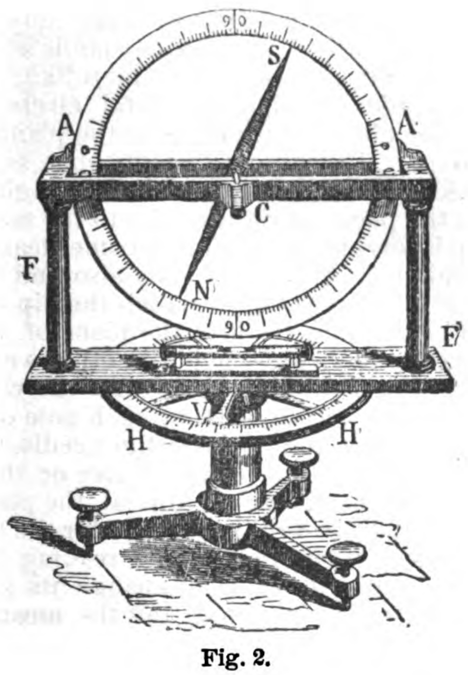


Fig. 2.

means of two fine polished cylinders of steel, which are placed accurately at the centre of the needle, and project at right angles from it: so adjusted, the needle moves with little or no friction. It is so made, moreover, that before being magnetized it remains indifferently in any position; after magnetization, therefore, the dip which it shows is wholly due to the magnetic influence of the earth.

In order to understand how an observation is made with the dipping-needle, we must regard the directing force of the earth's magnetism exerted upon the poles of the needle in any vertical plane in which it may happen to be, as resolved into two forces, one acting at right angles to the plane, and the other acting in the plane. There being a corresponding but opposite force at each pole, there are thus two statical couples acting on the needle—one tending to turn it at right angles to the plane in which it moves, the other tending to bring it round to a position in the plane, such that the needle and the forces of the couple may be in a line. In the dipping-needle, the mode of support completely neutralizes the first of the couples; and the position that the needle takes in any plane is due wholly to the second. When the plane of the needle is at right angles to the magnetic meridian, the forces of this latter couple act vertically, and bring the needle to the same position. This, then, gives the means of determining the magnetic meridian, for we have only to bring the vertical circle round till the needle stands at 90° to put it in a plane at right angles to that meridian; and then by moving the vernier on the horizontal circle over 90°, we place the upper circle and needle in the plane of the magnetic meridian. The dipping-needle thus serves the purpose of a Declination Needle (q.v.). In bringing the needle round from the plane at right angles to the magnetic meridian, the dip is less and less, till it becomes least in the plane of that meridian. We might thus also find the magnetic meridian, for it is that plane in which the dip of the needle is least. When the needle is in the plane of the magnetic meridian, the couple which acts in other vertical planes at right angles to them disappears, and the whole force of the terrestrial magnetism acts at each pole of the needle, forming a couple which swings the needle round till it stands in a line with itself. The degree on the circle then pointed to by the needle is the dip at the place of observation. Two readings are necessary, for the reason stated in the DECLINATION NEEDLE. One reading is taken, the needle is then reversed so as to change its supports, and then a second reading is noted, and the mean of the two gives the correct reading. The position of the needle when the dip is read off is manifestly the same that a needle suspended in air, if that were possible, and free to move in any way, would finally assume. In resolving, therefore the total directive force of the earth as we have done above, we must keep in mind that it always acts parallel to the direction of the dipping-needle.

DIPROTODON, n. *dĭp-rŏt'ō-dŏn* [Gr. *dis*, twice; *protos*, first; and *odous* or *odonta*, a tooth]: a gigantic fossil animal, nearly related to the kangaroo, found in the Upper Tertiary beds of Australia. DIPROTODON'TIA, *-shĭ-a*, a primary group of the *Marsupialia*, consisting of genera which have only two lower incisors, the canines rudimentary or wanting, and the molars generally with broad grinding crowns. It contains the kangaroos and phalangers.

DIPSA'CEÆ AND DIP'SACUS: see TEASEL.

DIPSAS, n. *dĭp'săs* [Gr. *dipsas*—from *dipsa*, thirst]: genus of non-venomous serpents of the family *Colubridæ*, of very elongated form, and with a thick, broad, and obtuse head. Their bite is said to produce extreme thirst. They are tree-snakes, inhabitants chiefly of the warm parts of Asia and America. One species only, *D. fallax*, somewhat doubtfully referred to this genus, occurs in the south of Europe. Some of the species are of great size. The figure represents a large and beautiful species found in Java and Sumatra. The form is more attenuated than in others of the genus.

Dipsas cyanodon.

DIPSOMANIA, n. *dĭp'sō-mā'nĭ-ă* [Gr. *dipsa*, thirst; *manĭă*, madness): a diseased state involving a propensity to drunkenness. Dip'soma'niac, *-nĭ-ăk*, one who has an irresistible propensity to drunkenness.—*Dipsomania;* also *Oinomania* [Gr. *oînos*, wine], used by German writers; and the English *Drinking Insanity;* designate a disease involving a confirmed and irresistible or insane craving for alcoholic stimulant. It is of importance to distinguish dipsomaniacs from the ordinary intemperate and drunken, many of whom are able, for a time at least, to perform their usual occupations during business-hours. Many hard drinkers can exercise wonderful control over themselves, choosing the time to drink and the time to keep sober; and while sober, can perform all their family, professional, social, or even religious duties—so far as these are outward. Some of them may drink continuously, until attacked by *Delirium Tremens* (q.v.), or fall into the state of *Delirium Ebriosum* (q v.), or what has been called *Mania a potu;* but when the supplies are stopped, and the necessary treatment is undergone, they are soon able to resume their usual duties, and too soon, in general, their former practices.

There is, however, especially in persons of a nervous and sanguine temperament and constitution—and more readily in women than in men—a condition in which the mere vice is transformed into a disease, the vicious habit into an insane, impulsive propensity, and then the drunkard becomes a dipsomaniac. The alcoholic principle, by habitual abuse, perverts the action, if not the nutrition of cerebral matter; and the frequent disturbances of the mental functions from fits of intoxication, the loose and irregular habits engendered, and the alternate states of remorse and attempts to drown conscience by more copious libations, all combine to create the dipsomaniac. He loses command over his will; has no power to resist the craving for alcoholic stimuli; and is transformed into the involuntary slave of an insane propensity. Physically, the dipsomaniac has a lamentably broken-down aspect; limbs feeble and tremulous; visage pale, leaden-colored, or sodden; and eyes watery and lustreless. But in the manifestations of mind and heart, the change is still more sad. A process of mental deterioration goes on simultaneously with the habit of indulgence; the main aim of life is how to obtain liquor; capacity for business is limited to the means of gratifying the craving; the precepts of morality and religion, the ties of nearest and dearest kin, have no sway over him; indeed, no consideration, human or divine, will interpose any barrier in the way of gratifying the propensity, whenever it is possible. Nor does he now drink with real relish, socially and convivially, but will swallow spirits, away from society and observation, even as it were a drug; and the only satisfaction derived from the act is, that it secures insensibility to the wretched state of mind which prompts the insatiable desire When this has gone on for some time, although a suspension of the use of stimulants be imposed by the interference of friends, or by the occurrence of an attack either of the form of delirium or maniacal excitement mentioned, yet his mind has suffered so materially, that unless control is exercised over him, and continued for a considerable period, he returns immediately like the 'dog to his vomit.' His moral feelings become more and more perverted, and his intellectual powers weakened. He is thus rendered either facile or wasteful, and incapacitated for the ordinary business of life; or he is irascible, resentful, or mischievous, and torments and annoys those about him, or commits homicide or suicide; or he becomes decidedly insane. Such is acquired dipsomania. But very frequently it is a disease, *ab origine*—a constitutional, and, in the greater proportion of instances, a hereditary affection. When it takes this character, dipsomania resembles other constitutional diseases; and such cases especially illustrate its affinity to insanity. It is well known that gout and rheumatism, or disease of the heart, may be developed from errors in the mode of living of individuals in whose family connections there is no sign of predisposition; while, on the other hand, these diseases may exist also in virtue of a strong hereditary tendency, without any appreciable infringements of the laws of health. And so with dipsomania; for, while frequently resulting from acquired vicious habit, it occurs likewise from an insane hereditary taint, frequently brought on children by the sins of their parents, especially if the latter have suffered from repeated attacks of delirium tremens, or have been confirmed dipsomaniacs. Indeed, it has been seen in the offspring of dipsomaniacs even during childhood, and that also in the sudden paroxysmal form. But what goes still further to prove its affinity to insanity, is the well-known fact, that in the family of the dipsomaniac, not only several cases of this drink-craving propensity are often seen, but marked instances of mental disorder in other forms. Some interesting examples of this may be found in the *Edinburgh Medical Journal*, 1858, April, by Dr. Thompson of the Perth prisons. When dipsomania thus occurs from constitutional organization, the disease is assuredly of a worse type than when it springs out of the vicious habit of drinking. There is generally more eccentricity of habit and deportment, more perversity of mind and disposition, and more untruthfulness and deceit, which is a remarkably uniform feature in this malady. The victim of it is more unscrupulous in the means employed to gratify the ruling desire of existence; and when the disease is fairly developed, and allowed to take its course unrestrainedly, the moral sense becomes utterly perverted, and the intellect annihilated, so that one affected is readily led to the commission of crimes which would not otherwise be perpetrated, or sinks into a state of complete imbecility or hopeless mania. Whether, therefore, the disease exists in its ordinary phases and intensity from voluntary intemperance; or whether it springs out of the propensity, as a consequence of abnormal organization—

and these are sufficiently characteristic to present a marked line of distinction from the ordinary vice of intemperance—the pathological and mental phenomena and results are the same. Among special features in each case, affording additional evidence of decided mental unsoundness, are senseless extravagance; ridiculous eccentricity of conduct; gross indecency and profanity; tendency to petty theft; perverseness, vindictiveness, and impulsive violence.

If this modern theory, now generally held by medical men, be correct, evidently special physical treatment is a prime requisite. As the dipsomaniac is incapable of governing his own will, or of any effort to subdue his ruling desire, it is evident that he should be placed under the power of others who have the means of controlling him. From the very nature of the malady, it is scarcely to be expected that the dipsomaniac will voluntarily submit to control, or continue under it for a sufficient length of time to receive lasting benefit; and therefore it seems essential, as in the case of other insanities, that legal power, with proper precautions and restrictions, should be available, to secure the possession of his person, and the protection of his property. It is certainly an overstrained delicacy in legislation to shirk interference with a class of cases which lead to so much private misery and public expenditure, and general danger. Moreover, legal restraint affords the victim his only chance of cure and restoration to society.

In Britain there are some establishments for inebriates, on a small scale; only a very few individuals enter them voluntarily.

The United States are in advance of other nations in legislation regarding the care of the person and property of inebriates; for to the judge is committed the care and custody of all insane persons, and of all persons who are wasteful and incapable of conducting their own affairs, in consequence of habitual drunkenness; and he is empowered to provide out of their estates for their safe keeping and maintenance, and for the maintenance of their families and the education of their children. There are numerous homes or retreats for dipsomaniacs in the United States; but into all the admissions are mostly voluntary.

In several cities of the United States for 20 years similar institutions are in active operation, some amply endowed, others supported partly from public funds, though into all the admissions are mostly voluntary. Of these there are now upward of 12 homes or retreats; and the Boston 'Washingtonian Home,' is pointed to as a model institution. But the institution best known is the New York State Inebriate Asylum, at Binghamton. It is a massive and costly structure, affording accommodation to about 200 inmates, amply endowed by the state, and with every arrangement and appliance for the treatment of patients. Here an average of 40 per cent. of the cases admitted are said to have been cured. It is evident, however, from the number of boarders reported as annually undergoing treatment in these various American retreats, that all sorts of drunkards are received; and we fear that the good accomplished must often be only partial and temporary. Thus, in the Washingtonian Home, Boston, which—according to one of its reports—has accommodated an average of about 18 persons daily, and is said to have had from 250 to 300 cases annually under treatment, the necessarily brief average residence of each gives little hope of much lasting benefit to dipsomaniacs, for whom legislation is desirable. It is supposed, however, in the United States, that these state-supported institutions have done an economical service by keeping inebriates out of the alms-houses, etc , and by restoring about one-third of their patients to the number of bread-winners in honorable citizenship; thus preventing them and their families from becoming a burden on the state. In 1870, an ' Association for the Cure of Inebriates' was formed, composed of physicians, with the superintendents and friends of inebriate asylums, which has ever since been most active in its operations, and by meetings, publications of transactions, and otherwise, has greatly helped forward the philanthropic movement. See INSANITY: INTOXICATION: TEMPERANCE.

DIPSOSIS, n. *dĭp'so-sĭs* [Gr. *dĭpsaō*, I thirst]: a morbid thirst; excessive desire of drinking.

DIP'TERA: order of insects, which received from Aristotle the name it still bears. Its distinguishing characters are so obvious that it has been acknowledged, with little change of its limits, by almost all naturalists. FLY is a popular name very generally applied to dipterous insects, and often with some distinguishing prefix (as House-fly, Flesh-fly, Blow-fly, Bot-fly, Crane-fly, etc.), though it is sometimes used with such prefix to designate insects not belonging to this order (Dragon-fly, Day-fly, May-fly, etc.). Midges, knats, and mosquitoes also are dipterous insects. In the number of species which it contains, this is one of the most extensive orders of insects: some of the species are remarkable also for the immense multitudes in which they appear; and though most of them are of small size, and few attract the eye by brilliant hues, not a few are important on account of the annoyance or mischief which they cause, either in their perfect or in their larva state, while many of their larvæ (maggots) are very useful in consuming putrescent animal matter, which might otherwise be a source of pestilence.

The D. have only two wings, which are membranous and simply veined. A little behind the wings are two small slender organs called *Halteres*, poisers, or balancers, the use of which is not well known. They are usually present even in those exceptional insects of this order in which the wings are not developed. The head of the D. is generally in great part occupied by the large compound eyes, which often contain thousands of facettes; and besides these, three simple or stematic eyes (ocelli) are often present, placed on the crown of the head. The mouth is formed exclusively for suction, and is usually furnished with a short membranous suctorial proboscis, composed of parts which represent, though so differently modified, the portions of the mouth in coleopterous and other masticating insects, some of the parts, however, often disappearing. The proboscis of many is capable of piercing the skins of animals on the juices of which they feed; others are destitute of this power of piercing. Many feed chiefly on saccharine and other vegetable juices. In some genera, the perfect insect seems destitute of a mouth; and the term of life, after the perfect state has been attained, very brief in some, appears brief in all. The power which many dipterous insects possess of walking even on very smooth surfaces, in any position, even with the back downward, familiar in the common house-fly, has not yet received sufficient explanation. The opinion that their feet are furnished with disks for the formation of a vacuum, has been called in question, but nothing satisfactory has been substituted for it. The terminal rings of the abdomen in the females of many species, form an ovipositor capable of piercing the substances in which the eggs are to be laid, and composed of pieces which may be exserted or retracted into one another like those of a telescope. The eggs are generally deposited in putrescent animal substances, but those of some kinds in the bodies of living animals, some in vegetable substances; the larvæ of some live in water; the eggs of a few are hatched within their own bodies, and the larvæ of some even remain there till they pass into the pupa state. All the D. undergo a complete metamorphosis. Their larvæ are destitute of true feet, though some of them have organs which serve the same purpose; some have a distinct head; others have the head soft and changeable in form, capable of being retracted into the body, and distinguishable only by its position, and by the organs of the mouth. Those which dwell in water or in fluid putrescent matters, have a retractile tail-like prolongation of the body, terminated by a radiated expansion, which communicates with air-tubes, and constitutes part of a very remarkable respiratory system. The larvæ of some D. spin cocoons when about to pass into the pupa state; in others, the skin of the larva hardens and encases the pupa; the perfect insect finally making its escape by forcing off with its head the end of its pupa case.

DIPTERACEÆ, *dĭp-ter-ā'sē-ē*, or **Dipterocarpaceæ**, *dĭp-tėr-ō-kâr-pā'sē-ē:* natural order of exogenous plants, consisting of beautiful and majestic trees, natives of the E. Indies. Some trees of this order, of which about 50 species are known, are highly valuable as timber trees. Among them is the Sal (q.v.), most esteemed timber-tree of India. They abound also in balsamic resin, and their resinous products are used for a variety of purposes. See **Anime**: **Camphor**: **Copal**: **Dammar**: **Varnish Tree**: **Sal**.—*Dipterocarpus*, the genus from which the above order has received its name, contains several species of the noblest trees of India. They abound in the warm parts of the e. coast of the Bay of Bengal and the E. Peninsula. The wood is used for house-building, ship-building, etc. *D. turbinatus*, the **Gurjun** or **Goorjun Tree**, the species by which the genus first became known, often attains a height of upward of 200 ft., and a girth of 15 ft. It has a pale-gray trunk, rising without a branch till it forms at its summit a small symmetrical crown. The leaves are broad, glossy, and beautiful; the flowers in white racemes, but not conspicuous. The wood is hard, close-grained, and durable. A fragrant oil which exudes from the trunk is extremely valuable for pitch and varnish, and is also medicinal. It is procured by cutting transverse holes in the trunk, pointing downward, and lighting fires in them, which causes the oil to flow. The tree is called sometimes the WOOD-OIL TREE. This oil or balsam is procured also from other species of *Dipterocarpus*. *D. trinervis* yields a resin valuable for plasters, acting on the mucous membranes like Balsam of Copaiva. The Javanese smear banana leaves with this resin, which then burn as torches, with a pleasant odor and white light.

DIPTERAL, a. *dĭp'tėr ăl*, or **DIP'TEROUS**, a. *-ŭs* [Gr. *dis*, twice, double: *ptĕron*, a wing]: having two wings only; pertaining to the order of insects having two wings, called **DIP'TERA**, or **DIP'TERANS**, comprising the house-flies and their allies.

DIPTERUS, *dĭp'tėr-ŭs:* genus of fossil ganoid fishes, peculiar to the old red sandstone, in which two species have been found. They derive their name from their most striking characteristic—the double anal and dorsal fins, opposite each other. The head is large and flattened, the teeth subequal, the scales perforated by small foramina, and the tail heterocercal.

DIPTYCH, n. *dĭp'tĭk* [Gr. *diptŭcha*, a pair of tablets—from *diptŭchos*, folded, doubled]: a double writing tablet, or two writing tablets, which could be folded together. Herodotus speaks of such a tablet, made of wood and covered with wax. It was in the later Roman time, however, that they were most used, and those which have been preserved belong chiefly to the period when classical was merging into medieval life. The beautiful carving with which they are often covered on the outside, represents frequently a combination of classical and Christian subjects. Ivory and metal were sometimes used in place of wood; but the construction was always the same, the wax with the writing being in the inside. Under the emperors, diptychs were distinguished into consular and ecclesiastical. The former, presented by the consuls and other magistrates to their friends and those officially connected with them at their entrance on office, were inscribed with their names, and bore their portraits. The ecclesiastical diptychs were sometimes registers of bishops, saints, and martyrs, were decorated with scenes from sacred history, and preserved in the churches as part of the sacred ornaments. Those that exist are of various sizes, rarely exceeding eight inches by four.

DI'PUS: see JERBOA.

DIPYRE, n. *dĭ-pīr'* [Gr. *dis*, twice; *pur*, fire]: a mineral, so called from the double effect of fire upon it, by fusing it and rendering it slightly phosphorescent.

DIRCA: see Leather-wood.

DIRDUM, or Dirdam: see Durdum.

DIRE, a. *dīr* [L. *dīrus*, terrible, dreadful: It. *diro:* comp. Scot. *dour*, stern, severe: Gael. *daor*, doom]: dreadful; dismal; evil in a great degree; terrible; very calamitous. Dire′ful, a. *-fûl*, dreadful; terrible. Dire′fully, ad. *-lĭ.* Dire′fulness, n. Dire′ness, n.

DIRECT, a. *dĭ-rĕkt′* [F. *direct*—from L. *dīrectus*, made straight—from *dis*, intensive; *rectus*, straight: It. *diretto:* comp. Gael. *dirich*, to straighten; *direach*, straight]: straight forward; not crooked or winding; straight; right; not circuitous; plain; open: N. a mark in music, to guide the performer from the last note of one stave to the first of another: V. to show the right road or course; to aim or point in a straight line; to regulate; to guide or lead; to order or instruct; to address, as a letter. Direc′ting, imp. Direc′ted, pp. Direct′ly, ad. *-lĭ*, in a straight course; without delay; immediately; openly; expressly. Direct′ness, n. straightness. Direc′tion, n. *-rĕk′shŭn* [F.—L.]: aim at a certain point; the line in which a body moves by force; a particular line or course; superintendence or management; guidance; order; instruction; the name, address, etc., on the cover of a letter; the board of directors or managers of a public company. Direc′tive, a. *-tĭv*, that can direct. Direc′tor, n. a manager of a public company or institution. Direc′tress, *-trĕs*, or Direc′trix, n. fem. *-trĭks*, a woman who. Direc′torship, n. the office. Direc′torate, n. *-tėr-āt*, the office or body of directors. Directo′rial, a. *-tō′rĭ-ăl*, pertaining to direction or command. Direc′tory, a. *tėr-ĭ*, guiding; instructing: N. a rule to direct; a guide; a book containing directions for public worship—generally applied to that drawn up by the Westminster Assembly of Divines, 1644; a book containing the names, addresses, etc., of the inhabitants of a place (as a city), arranged in alphabetical order; in *French hist.*, the name given in 1795-99 to the executive body of the French Republic. Direct relationship: see Consanguinity.—Syn. of 'direct, v.': to conduct; superintend; administer; oversee; control; manage; dispose; instruct; command; order; regulate; aim; point; govern; address; superscribe;—of 'directly': promptly; instantly; soon; instantaneously; expressly; straightway.

DIRECT and RET′ROGRADE: in *astronomy*, designating the motion of a planet; said to be direct when the planet goes forward by its proper motion in the zodiac according to the succession or order of the signs (i.e., from w. to e.), or when it appears to do so to an observer; said to be retrograde when it appears to move the contrary way.

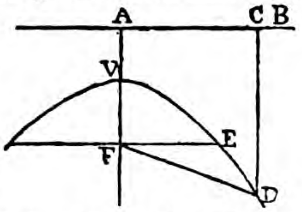
DIRECTOR: one of a number of persons appointed to conduct the affairs of joint-stock undertakings, such as banks, railways, water and gas companies, fire and life assurance companies, and various kinds of manufacturing and trading concerns. The office of a director is in all cases one of responsibility, sometimes of considerable risk, and according to commercial maxim, ought not to be accepted lightly or for the mere honor of the position. It is not business-like and it is not honest to accept the office without the distinct purpose to attend faithfully to all its duties. As a member of a body incorporated by the legislature, a railway director is bound to administer the affairs of the company only with the means legitimately put at his disposal, nor can he be expected to incur any personal liability to sustain the general operations. Usually, however, when there is any temporary or peculiar shortcoming in the finances, the directors overdraw, to a certain extent, the company's bank account on their personal responsibility; in all such cases, and where the outlay has been justifiable, the shareholders rarely decline to authorize measures which will relieve the directors of their obligations. In the case of banks, there are often two kinds of directors—the ordinary and the extraordinary. The ordinary directors are practically the conductors of the undertaking, while the extraordinary attend only on particular occasions, and are in fact, little else than ornamental appendages, whose names impart distinction to the concern. As regards bank as well as railway directors, it is the English rule that they must respectively possess a certain amount of stock; in the United States it is not generally required that a director be a shareholder, though directors almost always are such. It is an understanding that the directors of railways, banks, and assurance companies, should be paid in some way for their services. Being mostly men in business, they cannot be expected to give away their time and take trouble for nothing. Their payment, however, in the shape of an *honorarium*, is generally trifling in comparison to the labor. At meetings of shareholders, small sums are voted to be set aside for the directors, which sums are, for the most part, appropriated in the ratio of attendance. The insignificance of these fees cannot justify the view that a scrupulous examination into affairs is not reasonably to be expected; for it is clear there can be no valid excuse for neglecting a trust voluntarily accepted.

The difficult questions as to the cases in which directors incur liability for the losses sustained by the shareholders, have often been raised in courts of law. The trial and imprisonment in Scotland 1879 of the directors of the City of Glasgow Bank drew attention to this subject again. In the United States, directors causing loss to stockholders by neglect resulting in gross mismanagement, may generally be held personally liable. See JOINT-STOCK COMPANY. Laws in the different states vary, but some general principles of both English and American law, are: 1. That the first directors shall be selected, and their number determined, by the subscribers of the original memorandum of association, who shall themselves be deemed directors until other directors are appointed. 2. That a director shall vacate his office by the acceptance of any other office or place of profit under the company, by bankruptcy or insolvency, or by being concerned in any contract with the company; but in the U. S., a director may be also a sec. or a managing agent. 3. At the first ordinary meeting after the incorporation of the company, all the directors shall retire from office; and at the first ordinary meeting in every subsequent year, one-third of the directors for the time being, or if their number is not a multiple of three, then the number nearest to one-third, shall retire from office. In every subsequent year, one-third, or other nearest number, who have been longest in office, shall retire. A retiring director shall be re-eligible. (On these details, as on some others here given, there are some variations in the statutes.) 4. The company in a general meeting may increase or diminish the number of directors. 5. Any casual vacancy occurring in the board of directors may be filled by the directors; but any person so chosen shall retain his office so long only as the vacating director would have retained the same if no vacancy had occurred. The company, in general meeting, may remove any director, and appoint another in his stead. 6. The directors may meet together for the dispatch of business, adjourn, and otherwise regulate their meetings as they think fit, and determine the quorum necessary for the transaction of business. 7. Questions arising are determined by a majority of votes, the chairman having a casting vote in case of equality. 8. A director may at any time summon a meeting of directors. 9. The directors elect their own chairman, and determine the period of his office. In case no chairman has been appointed, or he is absent the directors shall appoint one of their number to preside for that time only. 10. Directors may delegate their powers to committees of such number as they may judge expedient. 11. The directors must cause minutes to be made in books provided for the purpose. These minutes shall set forth all appointments of officers made by the directors, the names of the directors present at each meeting of directors or of committee, all orders made by meetings or committees, and all resolutions and other proceedings of these bodies. These minutes shall be signed by the chairman, and shall be receivable in evidence of what took place without any further proof. 12. The directors, with the sanction of the company in a general meeting, may declare that a dividend shall be paid to the shareholders in proportion to their shares. No dividend shall be payable except out of the profits arising from the business of the company. 13. If the directors shall declare any dividend when the company is known by them to be insolvent, or any dividend the payment of which would, to their knowledge, render it insolvent, those of them taking part in such act shall be jointly and severally liable in the amount of the dividend declared, for the debts of the company then existing, and for all that shall be thereafter contracted, so long as they shall respectively remain in office, Before recommending a dividend, the directors may set aside a reserved fund out of the profits of the company. Directors have a discretionary power to pass a customary dividend, for the good of the company, and the courts cannot interfere with their action, if it do not violate the charter. But the directors cannot take the company out of its regular business, nor can they sell its necessary property, nor wind up its business. In most states they cannot represent the company in any dealings with themselves, nor bind it to other parties in any contract in which they are interested. In companies incorporated for carrying on undertakings of a public nature, such as railways, the appointment, rotation, and powers of directors, are often regulated by special statutes. See LIABILITY (LIMITED) ACTS: JOINT-STOCK COMPANIES.

DIRECTORY: executive body of the French republic, 1795-99. On the death of Robespierre, 1794, a reaction commenced in the Convention itself, as well as throughout all France, against the sanguinary excesses of the Terrorists. Ultimately a new constitution—that of the year 3 (1795)—gave birth to a new government, composed of a legislative body divided into two councils—the Council of Five Hundred, whose function was to propose laws; and the Council of the Ancients, whose function was to pass them. The actual executive power was intrusted to five members chosen from both sections, and who sat at the Luxembourg. Their names were Lépeaux, Letourneur, Rewbel, Barras, and Carnot. These five constituted the famous *Directory*. They assumed authority in a moment of immense peril. France was environed with gigantic adversaries, while distrust, discontent, and the malice of rival factions made her internal administration almost hopeless. The franctic heroism of her soldiers saved her from spoliation by the foreigner; and had all the members of the Directory been patriotic and honest, she might have been saved also from spoliation by her own children. But, on the contrary, the home policy of the Directory was deplorable. The demoralization which had begun to characterize officials even in Danton's time, now seized almost every class. Barras, representative of all the turpitude of the hour, set the example. The majority of the two Councils were equally corrupt; and though there were some both in the Councils and Directory whose virtues and talents were unimpeachable, they were too weak to counteract the knavery of their associates. It soon became clear that France could not be reconsolidated by the fag-ends of the Revolution. The power and skill requisite for such a herculean work were to be sought elsewhere, among men who had received a nobler discipline than could be obtained in the political squabbles of the metropolis. Such was the thought of the Abbé Sièyes. He turned his eyes to the army, where a host of new and brilliant names had appeared—Hoche, Joubert, Brune, Kleber, Desaix, Massena, Moreau, Bernadotte, Augereau, Bonaparte. Sièyes propounded his plan for the overthrow of the Directory, and the establishment of a consulate, that should be in reality a monarchy under republican forms, first of all to Moreau, who was frightened by its audacity; then to Bernadotte, whose excessive caution hindered him from approving of it; then to Augereau, who could not understand it; finally to Bonaparte, on his return from Egypt. The last admired the project; a conspiracy was rapidly formed; all those functionaries who had been promised places by the Directory, but had not received them, offered their aid; and by the *coup d'état* of the 18th Brumaire (q.v.), an end was put to a government of weakness, immorality, and intrigue. It was succeeded by the Consulate (q.v.).

DIRECTORY FOR THE PUBLIC WORSHIP OF GOD: code of regulations concerning the different parts of public worship, drawn up by the Westminster Assembly 1644, ratified by the English parliament in the same year, and adopted by the general assembly of the Church of Scotland and by the Scottish parliament 1645. It was on express order from both houses of the English parliament, that the Westminster Assembly addressed itself to the work of preparing this Presb. Directory, to supply the place of the Book of Common Prayer, which had been abolished. In Scotland, it was hailed as conducive to 'a happy unity and uniformity in religion among the kirks of Christ in these three kingdoms, united under one sovereign,' and to 'the corroboration of peace and love between the kingdoms.' Many of the regulations of the Directory are still complied with in all branches of the Presbyterian Church in Scotland, but in many things it has been generally departed from; and a disposition prevails in almost all quarters to allow greater freedom and variety in the forms and unessential circumstances of worship; while many esteem a departure from the requirement of unnecessary *uniformity* in these things, as tending toward the healing as well as the prevention of divisions, and the establishment of a real *unity*.

DIRECTRIX, *dĭ-rĕk'trĭks*, in Geometry: right line perpendicular to the axis of a conic section, in reference to which its nature may be defined. Assuming the indefinite line AB in the figure as the directrix, and F a point without it as a focus, then, if the line FD revolve about F as a centre, while a point D moves in it in such a manner that its distance from F shall always be to CD, its perpendicular distance from the line AB, in a constant ratio, then the curve VD, described by the point D, is a conic section, and is an ellipse, a parabola, or an hyperbola, according as FD is less than, equal to, or greater than CD, or FV than VA. The constant ratio referred to is called the determining ratio of the conic.



DIREFUL, DIREFULLY, DIREFULNESS: see under DIRE.

DIREMPTION, n. *dĭ-rĕm'shŭn* [L. *diremptus*, separation or division]: in *bot.*, the occasional separation or displacement of leaves.

DIRGE, n. *dėrj* [contraction of L. *dirĭgĕ*, direct or guide —in the clause *dirĭgĕ nos Domĭnĕ*, etc., guide us, O Lord: comp. Gael. *deurach*, mournful—from *deur*, a tear]: a song expressive of grief, sorrow, or mourning; a funeral hymn.

DIRIMENT IMPEDIMENT, *dĭr'ĭ-mĕnt ĭm-pĕd'ĭ-mĕnt* [L. *impĕdimentum dirĭmens*, a destroying impediment, *impĕdimenta dirĭmentiă*, plu. forms: *impedimentum*, an impediment; *dirimens*, destroying, dissolving]: in *Rom. Cath. Chh.*, an impediment that nullifies marriage.

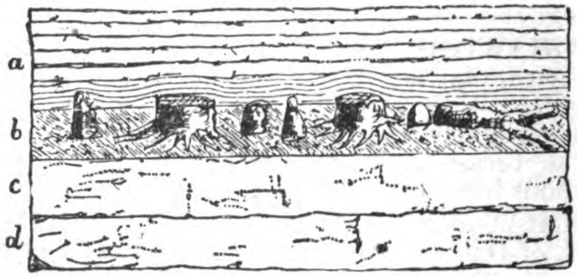
DIRK, n. *dėrk* [Scot. *durk;* Ir. *duirc*, a dirk: Ger. *dolch;* Sw. *dolk*, a dagger]: a short sword; a dagger; now worn by officers in some naval services, rather for ornament than for use.

DIRK-HARTOG ISLAND, *dirk-hâr'tŏg:* off the w. coast of Australia; lat. 26° s., and long. 113° e; 45 m. long, 10 m. wide. With two smaller islands to the north, all three having their lengths parallel with the mainland, it forms the breast-work of Shark's Bay, one of the most commodious inlets on that coast.

DIRSCHAU, *dĕr'show:* town in the province of W. Prussia, govt. of Dantzic, Prussia, on the left bank of the Vistula river, on the railroad connecting Berlin with Dantzic, 20 m. s.s.e. of the latter city. It is noted for the great iron bridge over the river there, which was built 1850–57, is 2,843 ft. long, has 6 spans of 410 ft. each, and accommodates a double railroad track, and double carriage roads and foot passages. The town is protected by a heavy stone wall, manufactures leather, cement, agricultural implements, and beer, and holds five fairs annually. Pop. (1871) 7,761; (1881) 9,713.

DIRT, n. *dėrt* [AS. *dryt;* Icel. *drit*, excrement: Ger. and Dut. *dreck*, filth, mud: comp. Gael. *doirt*, to spill]: any foul or filthy thing; mud or earth; the matter which renders a thing unclean: V. to make foul or unclean. DIRT'ING, imp. DIRT'ED. pp. DIRTY, a. *dėr'tĭ*, foul; nasty; not clean; base; mean: V. to make foul or filthy; to soil. DIR'TYING, imp. *-tĭ-ĭng*. DIR'TIED, pp. *-tĭd*. DIR'TILY, ad. *-tĭ-lĭ*. DIR'TINESS, n. *-nĕs*, foulness; nastiness. DIRT-EATING, *Cachexia Africana*, disease of the nutritive functions in which the patient is seized with an irresistible desire to eat dirt. Some tribes of African negroes are subject to this disease. DIRT-FLY, the yellow fly that frequents dung-hills, *Musca stercoraria*. DIRT-PIE, mud molded by children in imitation of pastry.

DIRT-BEDS, in Geology: quarrymen's name, now accepted as denoting several layers which, in the Isle of Portland, occur in the Lower Purbeck Beds (q v.), having the appearance of black dirt. They rest on the fresh-water beds of the Lower Purbeck, and consist of one principal layer, 12 to 18 inches thick, and from two to four thinner layers. The substance is, to a large extent a dark-brown or blackish earthy lignite, being the remains of an ancient vegetable soil. Through it are dispersed, in considerable abundance, rounded fragments of stones from three to nine inches in diameter. Fossil Cycads and Zamias are the predominant vegetable remains; they occupy their original upright position, having become fossil on the spots where they grew. The stumps stand erect for a height of from one to three, or even more ft., and at distances from each other similar to what may be observed in a recent forest. Besides these, the dirt-bed contains the silicified stems of coniferous trees, laid prostrate in fragments three or four ft. in length. From the accompanying diagram, it will be seen that the marine oolitic limestone, called Portland stone, was overspread with fluviatile mud, which became the soil on which a forest of Cycads and Zamias grew, and that this was afterward submerged without any violent agitation, since the layer of black earth has not been abraded, and then was covered with standing fresh water, from which the beds of calcareous mud, now converted into slate, were deposited.



Dirt-bed (Isle of Portland):

a, fresh-water calcareous slate; *b*, dirt-bed with stools of trees: *c* lowest fresh-water beds of the Lower Purbeck; *d*, Portland stone marine.

DIS, *dĭs* [L. *dis;* Gr. *dis*, twice, in two parts; akin to Skr. *dwis*, twice]: a common prefix which, with its form Di and Dif, denotes, not; the opposite of; contrary state; asunder or apart; difference or dispersion; a parting from—sometimes *dis* simply acts as an intensive particle. Dis signifies two, as in *dis*-syllable. Dis in French becomes Dé and Des.

DI′SA, n.: genus of plants belonging to the *Orchidaceæ* or orchids. *D. grandiflora* is found on Table Mountain near Cape Town, Africa, at an elevation of 3,582 ft., the only known locality.

DISABIL′ITY, Legal: incapacity; either absolute, which wholly disables the person from doing any legal act—e.g., outlawry, excommunication, attainder, alienage; or partial, e.g., infancy, coverture, lunacy, drunkenness, and the like. It may arise from the act of God, of the law, of the individual himself, or of his ancestor, or the person from whom he inherits.

DISABLE, v. *dĭs-ā′bl* [L. *dis*, not, and *able*]: to deprive of power; to render unable; to impair or destroy the strength of; to disqualify; in *OE.*, to impair or diminish. Disa′-

BLING, imp. DISA'BLED, pp. *-bld.* DIS'ABIL'ITY, n. *-bĭl'ĭ-tĭ*, want of strength or ability; weakness; incapacity. DIS'ABIL'ITIES, n. plu. *-tĭz*, want of legal qualifications. DISA'BLEMENT, n. *-bl-mĕnt*, deprivation of power or ability. DISABLING-STATUTE, a statute passed in England to prevent bishops, deans, and chapters, colleges and other ecclesiastical and eleemosynary corporations, and all parsons and vicars, from making improvident leases. which they were too often ready to do, in consideration of a fine or premium paid to themselves, the interests of their successors being entirely disregarded. It was called also a Restraining statute.—SYN. of 'disability': inability; disqualification; incompetence or incompetency; impotence;—of 'disable': to weaken; unfit; incapacitate; undervalue.

DISABUSE. v. *dĭs'ă-būz'* [L. *dis*. not, and *abuse:* F. *désabuser*, to undeceive]: to set right; to free from mistake; to undeceive. DIS'ABU'SING, imp. DIS'ABUSED', pp. *-būzd'*.

DISACCORD, v. *dĭs'ăk-kawrd'* [L. *dis*, asunder, and *accord*]: in *OE.*, to refuse consent. DIS'ACCORD'ING, imp. DIS'ACCORD'ED, pp.

DISACKNOWLEDGE, v. *dĭs'ăk-nŏl'ĕj* [L. *dis*, not, and *acknowledge*]: to deny; to disown.

DISADVANCE, v. *dĭs'ăd-văns'* [L. *dis*, not, and *advance*]: in *OE.*, to stop; to check; to keep back. DIS'ADVAN'CING, imp. DIS'ADVANCED', pp. *-vănst'*.

DISADVANTAGE, n. *dĭs'ăd-văn'tāj* [L. *dis*, not, and *advantage*]: state not prepared for defense; unfavorable condition or circumstances; that which hinders or retards success; loss; injury; hurt: V. to injure in interest; to prejudice. DIS'ADVAN'TAGED, a. *-tājd*, injured in interest. DIS'ADVANTA'GEOUS, a. *-tā'jŭs*, unfavorable to success or prosperity; not adapted to promote interest or good. DIS'ADVANTA'GEOUSLY, ad. *-lĭ*. DIS'ADVANTA'GEOUSNESS, n. *-jŭs-nĕs*, the state of being unfavorable to success; loss. —SYN. of 'disadvantage': detriment; damage; hurt; prejudice.

DISADVENTUROUS, a. *dĭs'ăd-vĕn'tū-rŭs* [L. *dis*, not, and *adventurous*]: in *OE.*, unprosperous; unhappy.

DISAFFECT, v. *dĭs'ăf-fĕkt'* [L. *dis*, not, and *affect*]: to make not well affected to; to make less faithful or friendly to; to alienate affection; to fill with discontent; in *OE.*, to dislike; to disorder. DIS'AFFEC'TING, imp. DIS'AFFEC'TED, pp.: ADJ. not disposed to favor or support; unfriendly. DIS'AFFEC'TEDLY, ad. *-lĭ*. DIS'AFFEC'TEDNESS, n. DIS'AFFEC'TION, n. *-fĕk'shŭn*, want of attachment or goodwill; unfriendliness; enmity.—SYN. of 'disaffection': disloyalty; hostility; alienation; ill-will; dislike; disgust.

DISAFFIRM, v. *dĭs'ăf-fėrm'* [L. *dis*, not, and *affirm*]: to contradict; to deny; to annul, as a judicial decision. DIS'AFFIRM'ANCE, n. *-fėrm'ăns*, denial; negation; confutation.

DISAFFOREST, v. *dĭs'ăf-fŏr'ĕst* [L. *dis*, not, away; mid. L. *afforestārĕ*, to make into a forest—from L. *af* for *ad*, to;

foresta, a forest]: to reduce from the state and privileges of a forest, and make common ground.

DISAGGREGATE, v. *dĭs-ăg'grĕ-gāt* [L. *dis,* asunder, and *aggregate*]: to separate a whole into its particulars or component parts: see AGGREGATE.

DISAGREE, v. *dĭs'ă-grē'* [L. *dis,* not, and *agree*]: not to agree; to differ; to be not the same; to be unsuitable. DIS'AGREE'ING, imp. DIS'AGREED', pp. *-grēd'.* DIS'AGREE'MENT, n. difference of opinion or sentiment; unsuitableness. DIS'AGREE'ABLE, a. *-ă-bl,* not pleasant; offensive. DIS'AGREE'ABLY, ad. *-blĭ.* DIS'AGREE'ABLENESS, n. *-bl-nĕs,* the state of unpleasantness.—SYN. of 'disagree': to dissent; vary;—of 'disagreement': dissent; difference; variance; diversity; dissimilitude; discrepancy, unlikeness; dissension; misunderstanding; dispute; division; discord; wrangle; jar; unadaptedness; controversy.

DISALLOW, v. *dĭs'ăl-low'* [L. *dis,* not, and *allow*]: not to permit or grant; to reject as untrue or unjust. DIS'ALLOW'ING, imp. DIS'ALLOWED', pp. *-lowd'.* DIS'ALLOW'ABLE, a. *-low'ă-bl,* not allowable; not to be suffered. DIS'ALLOW'ANCE, n. *-ăns,* refusal to admit or permit; rejection.—SYN. of 'disallow': to condemn; reject; disapprove; prohibit; censure; disown.

DISALLY, v. *dĭs'ăl-lī'* [L. *dis,* not, and *ally*]: in *OE.,* to disjoin; to sever. DIS'ALLY'ING, imp. DISALLIED, pp. *dĭs'ăl-līd'.*

DI SALTO, phrase, *dē sâl'tō* [It.]: in *mus.,* by a leap; used of melody progressing by skips.

DISANIMATE, v. *dĭs-ăn'ĭ-māt* [L. *dis,* not, and *animate*]: in *OE.,* to discourage; to deprive of spirit; to depress.

DISANNEX, v. *dĭs'ăn-nĕks'* [L. *dis,* not, and *annex*]: to separate or disunite.

DISANNUL, v. *dĭs'ăn-nŭl'* [L. *dis,* intensive, and *annul*]: to render null or void; to deprive of authority or force. DIS'ANNUL'LING, imp. DIS'ANNULLED', pp. *-nŭld'.* DIS'ANNUL'MENT, n. act of making void.

DISAPPEAR, v. *dĭs'ăp-pēr'* [L. *dis,* and *appear*]: to vanish from view; to hide, as from pursuers; to abscond; to cease; to withdraw from sight. DIS'APPEAR'ING, imp. DIS'APPEARED', pp. *-pērd'.* DIS'APPEAR'ANCE, n. *-ăns,* a removal from sight.

DISAPPOINT, v. *dĭs'ăp-poynt'* [L. *dis,* and *appoint:* OF. *desapointer*]: to defeat expectation; to frustrate; to foil; to balk; to hinder from possession or enjoyment of that which was reckoned on. DIS'APPOINT'MENT, n. defeat or failure of expectation.—SYN. of 'disappoint': to baffle; tantalize; fail; defeat; delude; hinder.

DISAPPROBATION: see under DISAPPROVE.

DISAPPROVE, v. *dĭs'ăp-prôv'* [L. *dis,* and *approve*]: to condemn; to censure; to reject; in *OE.,* to dislike. DIS'APPRO'VING, imp. DIS'APPROVED', pp. *-prôvd'.* DIS'APPRO'VAL, n. *-văl,* dislike; disapprobation. DIS'APPRO'-

vingly, ad. *-lĭ*. Disap′proba′tion, n. *-prō-bā′shŭn*, the act of the mind which condemns what is supposed to be wrong; dislike.

DISARM, v. *dĭs-ârm′* [L. *dis*, and *arm:* OF. *desarmer*, to deprive of weapons]: to strip or deprive of arms; to render harmless; to divest of anything threatening. Disarm′ing, imp. Disarmed′, pp. *-ârmd′*. Disar′mament, n. *-âr′mă-mĕnt*, act of depriving of arms, as a conquered army or body of troops—also applied to states; the reduction of the armed force of a state.

DISARRANGE, v. *dĭs′ăr-rānj′* [L. *dis*, and *arrange:* OF. *desarrenger*, to disorder]: to put out of order; to misplace; to unsettle. Dis′arrange′ment, n. the act of putting out of order; disorder; confusion.

DISARRAY, v. *dĭs′ăr-rā′* [L. *dis*, and *array;* OF. *desarroi*, disorder, confusion]: to undress; to overthrow; to throw into disorder: N. undress; confusion; disorder.

DISASSOCIATE, v. *dĭs′ăs-sō′shĭ-āt* [L. *dis*, and *associate*]: to disunite.

DISASTER, n. *dĭz-ăs′tėr* [F. *désastre*—from It. *disastro*, an evil chance, something brought about by an evil influence of the stars—from L. *dis*, not; mid. L. *astrōsus*, fortunate—from L. *astrum;* Gr. *astron*, a star—*lit.*, an ill starred or evil chance brought about by the evil influence of the stars]: misfortune; any unfortunate event; calamity; a sudden mishap: V. in *OE.*, to strike with calamity. Disas′tering, imp. Disastered, pp. *dĭs-ăs′tėrd*, in *OE.*, overwhelmed with calamity. Disas′trous, a. *-trŭs*, occasioning loss or injury; unfortunate; unlucky; calamitous. Disas′trously, ad. *-lĭ*. Disas′trousness.—Syn. of 'disaster': visitation; mishap; mischance; misadventure; grief; unhappiness.

DISAVOW. v. *dĭs′ă-vow′* [L. *dis*, not, and *avow:* OF. *desavouer*, to disavow]: to deny; to disown; to reject; the opposite of *own* or *acknowledge*. Dis′avow′ing, imp. Dis′avowed′, pp. *-vowd′*. Dis′avow′al, n. *-ăl*, a disowning; a denial. Dis′avow′er, n. *-ėr*, one who. Dis′avow′ment, n. denial.—Syn. of 'disavow': to repudiate; disclaim; disallow; disprove.

DISBAND, v. *dĭs-bănd′* [L. *dis*, apart, and *band:* OF. *desbander*, to loosen, to unbind]: to dismiss, as a regiment or corps from military service; to scatter or disperse. Disband′ing, imp. Disband′ed, pp. Disband′ment, n. the act of breaking up or dismissing, as from military service. —The greatest disbanding in history was that of the volunteer army of the U. S. which had put down the rebellion: abt. 1,100,000 men laid down their arms, and instantly and quietly merged themselves in the general citizenship, like snowflakes in the sea.

DISBAR, v. *dĭs-bâr′* [L. *dis*, separation or parting from, and Eng. *bar*]: to deprive a barrister of his right to plead. Disbar′ring, imp. Disbarred′, pp. *-bârd′*. Disbar′ring, n. the expelling of a barrister or lawyer from the bar, a power vested in *England* in the benchers of the four Inns of Court, subject to an appeal to the 15 judges:—in

Scotland, in the Faculty of Advocates (q.v.):—in the *United States*, vested in the judges of the court having authority to admit to legal practice. There is no appeal; but a restoration is sometimes possible after probation.

DISBELIEVE, v. *dĭs'bĕ-lēv'* [L. *dis*, and *believe*]: not to believe; to refuse to credit. DIS BELIEF', n. *-lēf'*, denial of belief; distrust; skepticism; incredulity; infidelity.

DISBENCH, v. *dĭs-bĕnsh'* [L. *dis*, asunder, and *bench*]: in *OE*, to drive from a bench or seat. DISBENCH'ING, imp. DISBENCHED', pp. *-bĕnsht'*.

DISBUD, v. *dĭs-bŭd'* [L. *dis*, asunder, and *bud*]: to deprive of buds or shoots.

DISBURDEN, v. *dĭs-bėr'dn*, sometimes DISBUR'THEN [L. *dis*, asunder, and *burden*]: to throw off a burden; to unload; to clear of anything weighty or troublesome; to ease the mind. DISBURD'ENING, imp. *-bėrd'nĭng*. DISBUR'DENED, pp. *-bėr'dnd*, relieved; eased of a burden.—SYN. of 'disburden': to unload; discharge. disencumber; relieve; free; unburden; confess.

DISBURSE, v. *dĭs-bėrs'* [F. *débourser;* OF. *desbourser*, to disburse — from L. *dis*, asunder; L. *bursa;* F. *bourse*, a purse]: to pay out money, as from a public fund or treasury; to spend or lay out money. DISBUR'SING, imp. DISBURSED', pp. *-bėrst'*. DISBURSE'MENT, n. *-bėrs'mĕnt* [F. *déboursement*]: the act of paying out money; the money paid out—used generally in *plu.*, DISBURSE'MENTS. DISBUR'SER, n. one who.

DISBURTHEN, v. *dĭs-bėr'thn:* the more correct spelling of DISBURDEN, which see.

DISC, and **DISCOBOLUS**: see QUOIT.

DISCANDY, v. *dĭs-kăn'dĭ:* an OE. word not well understood, occuring twice in Shakespeare's 'Antony and Cleopatra,' and usually said to signify 'to melt, to dissolve,' as from *dis*, asunder, and *candy*, the sweet-meat; these meanings do not make the sense plain in Shakespeare. DISCAN'DYING, imp. DISCAN'DIED, pp. *-kăn'dĭd*. *Note.*—Dr. C. Mackay derives the word from Gael. *diosgan*, to dry up.

DISCARD, v *dĭs-kârd'* [Sp. *descartar*, to throw cards out of one's hands: L. *dis*, asunder, and Eng. *card—lit.*. to throw out of one's hands the useless cards]: to dismiss from service, employment, or society; to cast off; to reject. DISCAR'DING, imp. DISCAR'DED, pp.—SYN. of 'discard': to dismiss; discharge; displace; cashier; pay off; cast off; turn away; put away.

DISCARIA, n. *dĭs-kăr'ĭ-a* [L. *discus;* Gr. *diskos*, a quoit, a disk, so called from the breadth of the disk]: genus of plants, order *Rhamnaceæ*. *D. febrifuga* yields the quina of Brazil: see CINCHONA.

DISCELIACEÆ, n. plu. *dĭs-sĕl-ĭ-ā'sē-ē* [Gr. *dis*, twofold; *skelos*, a leg, a limb]: family of operculate acrocarpous mosses, of gregarious habits, very dwarf and stemless, arising from a green prothallium spreading on the ground. DISCEL'IUM, n. *-ĭ-ŭm*, genus of mosses, type of the family *Disceliaceæ*.

DISCERN, v. *dĭs-zėrn′* [F. *discerner*—from L. *discernĕrĕ*, to set apart—from *dis*, asunder; *cerno*, I see, judge, or separate]: to see exactly; to separate by the eye or the understanding; to judge; to distinguish; to discriminate. DISCERN′ING, imp.: ADJ. acute; judicious; sharp-sighted. DISCERNED′ pp. *-zėrnd′*. DISCER′NER, n. *-nėr*, one who. DISCERN′MENT, n. [F. *discernement*]: the power of distinguishing one thing from another, as truth from falsehood; power of perceiving differences in things or ideas. DISCERN′IBLE, a. *-ĭ-bl*, visible; perceptible; manifest; that may be seen. DISCERN′IBLY, ad. *-blĭ*. DISCERN′IBLENESS, n. *-bl-nĕs*. DISCERN′INGLY, ad. *-lĭ*.—SYN. of ‘discern’: to discover; detect; descry; espy; perceive; penetrate; behold; note; recognize; apprehend;—of ‘discernible’: distinguishable; apparent; evident; discoverable;—of ‘discernment’: penetration; discrimination; judgment; discretion; acuteness; sagacity; insight.

DISCHARGE, v. *dĭs-chârj′* [L. *dis*, and Eng. *charge:* F. *décharger;* OF. *descharger*, to unload]: to unload, as a ship; to free from any obligation or penalty by written evidence, etc.; to pay, as a debt; to throw off or out; to let fly; to explode, as powder; to fire or let off, as a gun; to absolve or acquit; to free from claim or demand of money by a written acknowledgment of payment; to perform trust or duty; to deprive of office; to dismiss; to emit or send out; to set at liberty: N. a flowing or issuing out; that which is thrown out; dismission from office or employment; the written evidence of release from debt or obligation; liberation, as from imprisonment. DISCHARG′ING, imp. DISCHARGED′, pp. *-chârjd′*. DISCHARG′ER, n. one who; an instr. consisting of two brass arms held by a glass handle, for discharging the electricity in the Leyden jar.—SYN. of ‘discharge, v.’: to unload; disburden; clear; exonerate; shoot; perform; execute; fulfil; emit; send out; release; set free; throw off; discard.

DISCHARGE′, from the Military Service: by right at the expiration of the period for which attested; or earlier, by indulgence. In the latter case, the grant may be on reduction of numbers, or when the man is not worth retaining.

Soldiers are occasionally ‘discharged with ignominy,’ for some offense that brings dishonor on the corps. In such case, the regiment is assembled, the crime recapitulated, and the sentence read. The buttons, facings, chevrons, medals, and all decorations, are cut from the man’s uniform, and he is ‘drummed out’ of the regiment, if a foot-soldier, or by sound of trumpet, if it be a cavalry regiment.

DISCHARG′ING, in the Navy: the process of placing a ship ‘out of commission.’ A regiment of soldiers is permanently in pay, whether engaged in active service or not; but the crew of a ship are paid wages only so long as their names are on the books of a ship ‘in commission. Naval officers, too, are on full pay only so long as they belong to a particular ship in commission, except when ordered to certain duties on shore.

DISCHIDIA, n. *dĭs-kĭd′ĭ-a* [Gr. *dis*, twice, twofold;

schidion, a splinter]: pitcher-plants (not to be confounded with *Nepenthes distillatoria*, *Sarracenia purpurea*, and others, belonging to widely different orders of plants): genus of plants belonging to the order *Asclepiadaceæ*. They are shrubs or herbs, natives of India and Australia. *Dischidia Rafflesiana*, a creeping plant with a long twining stem, is destitute of leaves until near the summit, and as this may be two ft. or more from the roots, it can hardly depend on them for nourishment by absorption of fluid from the ground. It is therefore provided with a means for storing up the moisture which it from time to time collects. The pitcher appears formed of a leaf, with the edges rolled toward each other and adherent; the upper end, or mouth, is open to receive whatever moisture may descend from the air. The plant has also a tuft of absorbent fibres resembling those of the roots, which are prolonged from the nearest part of the branch, or even from the stalk to which the pitcher is attached, and [spread through the cavity. They introduce into the plant the nourishment collected in the pitchers.

DISCIDE, v. *dĭs-sīd′* [L. *dis*, twice; *cædo*, I cut, I kill]: in *OE.*, to cut in two; to divide. DISCI′DING, imp. DISCI′DED, pp.

DISCIFORM, etc.: see under DISK.

DISCINA, n. *dĭs′sĭ-na* [L. *discus*, a quoit]: genus of fossil brachiopods, in which the shell is generally circular or orbicular; the upper valve is limpet shaped, and the ventral valve flat or partly convex.

DISCIPLE, n. *dĭs-sī′pl* [F. *disciple*—from L. *discĭpŭlus*, a learner—from *disco*, I learn]: one who receives instruction from another; a scholar; a follower; an adherent in doctrine, etc.: V. to train; to rear; to bring up. DISCI′PLING, imp. *-sī′plĭng*. DISCI′PLED, pp. *-sī′pld*. DISCI′PLESHIP, n. the state of a disciple. DISCIPLINARIAN, n. *dĭs′sĭ-plĭn-ā′rĭ-ăn* [L. *discĭplīna*, instruction, teaching]: one who conducts a school with strictness and precision; one who instructs in naval and military tactics; one who allows no deviation from stated rules. DIS′CIPLINARY, a. *-plĭn-ėr-ĭ*, pertaining to discipline. DIS′CIPLINE, n. *-plĭn* [F.—L.]: training, physical or mental; cultivation and improvement; subordination or subjection to laws, etc.; bodily punishment; chastisement: V. to train and educate the body; to form the mind in habits of thought and action; to chastise; to punish. DIS′CIPLINING, imp. DIS′CIPLINED, pp. *-plĭnd*. DIS′CIPLINER, n. one who. DIS′CIPLINABLE, a. *-ă-bl*, that may be subjected to discipline; capable of instruction. DIS′CIPLIN′ABLENESS, n. *-bl-nĕs*. DIS′CIPLINANT, n. *-ănt*, one of a religious order, so called from exercising a strict discipline, or from scourging themselves.—SYN. of 'disciple, n.': learner; adherent; pupil; supporter; partisan;—of 'discipline, n.': training; education; instruction; culture; punishment; correction; drill; subjection; submissiveness; —of 'discipline, v.': to train; regulate; correct; form; bring up; chasten.

DISCIPLES OF CHRIST (at first commonly called **CAMPBELLITES**, or **CAMPBELLITE BAPTISTS**): large and growing organization of Christians which had its origin in the opinions and labors of Thomas Campbell (a 'seceding' minister from the Irish Presb. Church who settled in western Penn. 1808) and of his son Alexander, who followed him a year or two afterward. Both of them (disapproving, as narrow and rigid, the theological views in which they had been trained) earnestly desired, not merely a reformation of Christian doctrine, but what they called a restoration of Apostolic Christianity. Gathering a few friends into a society for earnest examination of the Bible, they determined to reject the authority of all creeds and doctrinal standards of human origin, and to adhere to the Scriptures as their only rule. On this basis a small congregation was organized at Brush Run, Washington co., Penn. Of this church Thomas Campbell was an elder; and by it, Alexander was ordained. Becoming convinced, as they said, that there was no scriptural authority for infant baptism, and that immersion only was baptism according to the New Testament, they, with their wives and three other persons, were immersed by a Baptist minister, 1812, June 2. Thenceforth they impressed the doctrine and practice upon their followers. Their numbers having increased, so that five or six congregations were formed, they were, in 1813, received into the Red Stone Bapt. Association. Leaving that body 10 years later they united with the Mahoney Assoc. in Ohio. About 1827 the Bapt churches generally withdrew fellowship from the followers of Campbell, and they consequently formed an organization of their own. At a very early period Alexander Campbell took the place of his father as the leader of the new movement. In preaching he was very active, extending his labors far from his own home. In 1823 he established *The Christian Baptist* which was printed, at first, on his own press, and (its name having been, in 1830, changed to *The Millennial Harbinger*) was continued until his death in 1866. In it he advocated his views with great persistence and force. In 1835 he greatly enlarged his work and influence by founding Bethany College in West Virginia, of which he continued pres. until his death. But his influence was, perhaps, most powerful in public debate, in which he ably contended with various prominent adversaries: in 1823, *on baptism* with Rev. Wm. L. McCalla, a Presb. minister famous for the vigor and skill with which he attacked everything that he deemed erroneous, in the church or out of it; in 1828, *on the truth of Christianity*, with Robert Owen; in 1836, *on papal infallibility* with Archbishop Purcell; and in 1843, *on the distinctive views of the Disciples* with Rev. Dr. N. L. Rice.

The form of government among the D. is congregational. No division of the church into 'clergy and laity' is recognized; but there are three classes of administrative officers with scriptural names: 1. Elders, Presbyters, or Bishops; 2. Deacons; 3. Evangelists, who are missionaries, supported by voluntary contributions. There are state and national organizations for co operative work in spreading the Gospel at home and abroad; but having no legislative or judicial functions in matters of faith and practice. The denomination has sometimes been charged with teaching baptismal regeneration This they deny, affirming on the contrary that they assign no efficacy or value to baptism except as an appointed declaration of faith in Christ. They regard it as the soldier's oath or '*Sacramentum*,' by which he swears allegiance to Jesus as king and is enrolled in the army of the Lord. They place it immediately after faith and a renewed heart; and regard it as a pledge of divine forgiveness and acceptance. They raise no question about 'open,' or 'close' communion. Believing that the Lord's Supper is for the Lord's people and that He has issued His own invitation, they spread the table and repeat His invitation; but institute no inquisition to discover whether any of the proposed communicants are without immersion. Their opinion, however, has been understood to be that only the immersed are really baptized, and that only the baptized are invited by Christ to His table. They administer the Lord's Supper every Lord's day, following, they say, the custom of the Apostolic Church. Regarding it not as a sacrifice, but as a simple, tender feast in memory of our Lord, in which his disciples may joyfully participate, they find it an unfailing source of religious inspiration, and a powerful motive for securing regularity in church attendance. The Lord's day they regard not as the Sabbath, but as a New Testament appointment in memory of the resurrection.

In common with all evangelical Christians the Disciples of Christ hold these great fundamental truths of the Gospel: 1. The divine inspiration of the Holy Scriptures, constituting them the all-sufficient and only sufficient revelation of God's will and rule of faith and practice; the Old Testament equally inspired with the New, but not equally binding upon Christians; the Old being especially God's will for the Jewish Church, the New, for men now, to whom He speaks by His Son. The Christian institution begins not with Abraham, or Moses, or John the Baptist, but at Pentecost; and the New Testament contains the history, constitution, and laws of the Church of Christ. 2. The manifestation of God in the tri-personality of Father, Son, and Holy Ghost; the proper deity of Jesus as the Christ the Son of God; His incarnation, teaching, miracles, death as a vicarious sacrifice for sin; His resurrection, ascension, and exaltation to supreme authority at the right hand of God; the personality of the Holy Spirit; His mission to convict the world of sin, and to comfort and sanctify Christians. 3. The moral depravity of the human race, their alienation from God, and consequent dependence on His mercy in Christ; their need of the new birth, leading to faith and repentance; justification by faith without works of the law, followed by personal holiness in all true Christians. 4. The Church of Christ as a divine institution, composed of all who by faith and obedience confess His name. 5. The fulness and freeness of the Gospel to all who will embrace it on the conditions proposed in the New Testament; so that if, under faithful Scriptural preaching, any persons remain unsaved it is because they have not responded to God's call. 6. The final, general judgment and separation of the righteous from the wicked—the former entering into everlasting life, and the latter into everlasting punishment.

EDUCATIONAL WORK.—Reports are given from about 40 institutes, colleges, and universities, established in at least 16 of the southern and western states. The data supplied are incomplete, but indicate able teachers, extensive courses of study, and an aggregate, in 1887, of about 6,000 students, reported and estimated. There are also academies and other schools. Many periodicals of various grades are circulated among the people; and publishing houses have been established at Cincinnati and St. Louis for the supply of Sunday-school, biblical, and other religious literature.

MISSIONS.—The work of home missions is prosecuted by state agencies, where these are sufficiently strong, supplemented by the National Missionary Convention in weaker localities and on the frontier. Foreign missions have been commenced in Turkey, India, China, and Japan.

The strength of the denomination is greatest in the west and south-west; but they have churches also in almost all the other states and territories, as well as in Canada, Great Britain, Sweden, and Australia. Their growth, rapid from the beginning, has been most remarkable during the last decade. The year book, 1888, reports the following figures (from actual reports and from average estimates) for the United States and foreign lands: churches, 6,859, members, 645,771; Sunday schools, 4,673, with membership, including teachers, 363,211; preachers, 3,388, of whom 2,835 are 'employed;' value of church property, $10,928,361; local expenses for church and Sunday-school, $1,709,691; contributions for home and foreign missions, $203,677; for education; $38,232.

DIS'CIPLINE, in Naval and Military Matters: a general name for the rules laid down for the proper behavior of the persons employed. The Mutiny Act, the Articles of War, and general orders issued through the naval and war depts., form collectively the code by which the discipline is regulated. In the navy, the discipline is necessarily very strict. See ARTICLES OF WAR: MUTINY ACT.

In the army, regimental discipline is maintained chiefly by the adjutant. He sees the regimental orders carried out; superintends the drill and field movements; inspects and tells-off all guards, escorts, and parties; regulates all duty rosters, or rollsters; receives garrison orders; keeps regimental books. The adjutant-gen. is to the whole army what the adjutant is to a regiment, in reference to discipline.

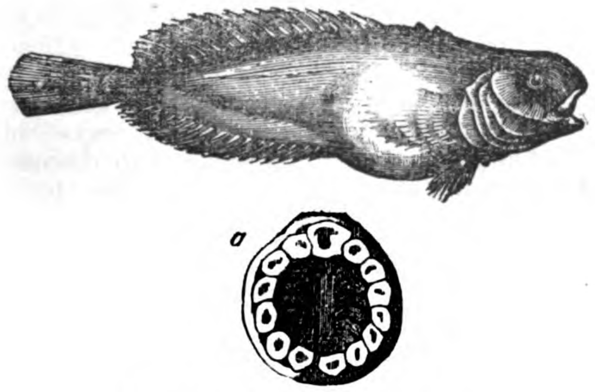
DIS'CIPLINE, FIRST BOOK OF (or FIRST BOOK OF POLICY), in Scottish Ecclesiastical History: important document, drawn up by John Knox and four other Presb. ministers, 1560. With the Confession of Faith of the same year, it must be held as exhibiting the principles on which the Reformed Church of Scotland was originally founded. It lays down rules for the election of 'pastors or ministers' by the congregation, their examination by 'the ministers and elders,' etc., also for the election of elders and of deacons; it recognizes the office of superintendent (q.v.) as then established; but it is most largely occupied with things pertaining to ecclesiastical discipline, strictly so called, and the mode of dealing with persons guilty of offenses. The First Book of Discipline never received the sanction of an act of parliament, but was subscribed by many of the nobles and barons.

DISCIPLINE, Second Book of, or 'Heads and Conclusions of the Policy of the Kirk:' document of great importance in the ecclesiastical history of Scotland, adopted by the general assembly 1578; and, though never ratified by act of parliament, still frequently appealed to as the most perfect and authoritative exhibition of Scotish Presbyterianism. The separations which have taken place from the Established Church in Scotland, have been on the professed ground not of dislike to the constitution exhibited in the Second Book of Discipline, but of anxiety for its perfect maintenance; and this document has recently been adopted as one of the articles of union among Scottish Presb. churches in Australia. It was prepared with great care by a committee of the general assembly, in which Andrew Melville had a leading part; and in a time of much conflict between the court and the church, concerning the power of the civil government in things ecclesiastical, church government, and patronage (q.v.). It begins by asserting strongly the powers regarded as essentially inherent in the church, sets forth the distinctions between civil and ecclesiastical government and their mutual relations, and lays down a thoroughly Presb. platform of church-government.

DISCLAIM, v. *dĭs-klām'* [L. *dis*, not, and *claim*]: not to claim; to disown; to reject as not belonging to one's self; to deny the possession or knowledge of; to renounce a claim to. Disclaim'ing, imp. Disclaimed', pp. *-klāmd'*. Disclaim'ant, n. *-klām'ănt*, one who disclaims. Disclaim'er, n. a denial; a disavowal.—Syn. of 'disclaim': to disavow; deny; renounce; reject; relinquish; decline.

DISCLOSE, v. *dĭs-klōz'* [L. *dis*, asunder, and *close*]: to open; to uncover; to reveal; to bring to light; to tell; to utter; to make known. Disclo'sing, imp. Disclosed', pp. *-klōzd'*. Disclo'ser, n. *-zėr*, one who. Disclo'sure, n. *-klō'zhûr*, an uncovering; an opening to view; the act of making known that which was hidden; that which is made known.—Syn. of 'disclose': to divulge; discover; tell; unveil; unclose; set free; lay open; expose.

DISCOBOLI, *dĭs-kŏb'o-lī:* according to Cuvier, a family of malacopterous fishes, remarkable for having the ventral fins united to form a sucking disk on the under surface of the body. To this family, also called *Cyclopteridæ*, belong the Lump-sucker (*Cyclopterus lumpus*), the unctuous sucker or sea-owl or cock-paddle *snail*, and one or two other British fishes. To this family Cuvier referred also the Remora (q.v), adverting, however, to the diffesent position of the sucking disk, and other important distinctions, on account of which a very different place in the system is now assigned to it. The use of the sucking disk, however, is much the same—that of attaching the animal to fixed substances, so that it may remain and obtain its food, where otherwise it would be swept away by the current. The adhesive power of the sucker, in the larger specimens of the lumpfish, remains after death.



Discoboli (*Liparis Montagui*):
a, sucker, on a larger scale.

DISCOCEPHALUS, n. *dĭs-ko-sĕf′a-lŭs* [Gr. *diskos,* a disk; *kephalē,* a head]: genus of *Infusoria,* belonging to the family *Euplota.* One species, *D. rotatorius,* is a native of the Red Sea.

DISCOID, a. *dĭs′koyd,* or Discoi′dal, a. *-koy′dăl* [Gr. *diskos,* a round plate; *eidos,* resemblance (see Disk)]: having the form of a disk or round plate.

DISCOLOR, v. *dĭs kŭl′ėr* [L. *dis,* the opposite of, and *color:* OF. *descolorer* and *descoulourer,* to discolor]: to stain; to tinge; to alter the natural hue or color of; to alter the complexion. Dis′colora′tion, n. *-ā′shŭn,* the act of altering the color; a staining; alteration of color.

DISCOMFIT, v. *dĭs-kŭm′fĭt* [OF. *desconfit,* or *déconfit,* overthrown, defeated—from mid. L. *disconfectus,* overthrown, destroyed—from L *dis,* completely; *confĭcĭō,* I defeat]: to defeat; to scatter in battle; to vanquish; to disappoint; to frustrate· N. overthrow; defeat. Discom′fiting, imp. Discom fited, pp. Discomfiture, n. *dĭs-kŏm′fĭt ūr* [F. *déconfiture*]: defeat in battle; overthrow; disappointment.

DISCOMFORT, v. *dĭs-kŭm′fėrt* [L. *dis,* the opposite of, and *comfort:* OF. *desconfiter,* to be discomfited]: uneasiness, mental or physical; pain; grief: V. to make uneasy; to pain or grieve.

DISCOMMODE, v. *dĭs′kŏm-mōd′* [L. *dis,* and Eng. *ac-*

commodate: F. *commode*, commodious, convenient]: to put to inconvenience; to trouble; to molest.

DISCOMPOSE, v. *dĭs′kŏm-pōz′* [L. *dis*, the opposite of, and *compose*]: to disorder; to unsettle; to confuse; to agitate or ruffle, as the mind. DIS′COMPO′SING, imp. DIS′COMPOSED′, pp. *-pōzd′*. DIS′COMPO′SURE, n. *-pō′zhûr*, disorder; agitation. —SYN. of 'discompose': to disconcert; confound; frustrate; foil; derange; ruffle; baffle; disturb; defeat; abash.

DISCONCERT, v. *dĭs′kŏn-sėrt′* [L. *dis*, apart, and *concert;* L. *concertārĕ*, to strive together: OF. *disconcerter*, to disorder—*lit.*, to strive together contrary ways]: to defeat or interrupt any order, plan, or scheme; to discompose or unsettle the mind; to defeat; to frustrate; to confuse. DIS′CONCERT′ING, imp. DIS′CONCERT′ED, pp.

DISCONFORMABLE, a. *dĭs′kŏn-fawrm′ă-bl* [L. *dis*, and *conformable*]: wanting agreement. DIS′CONFORM′ITY, n. *-ĭ-tĭ*, want of agreement; inconsistency.

DISCONNECT, v. *dĭs′kŏn-nĕkt′* [L. *dis*, the opposite of, and *connect*]: to break the ties of anything; to separate. DIS′CONNEC′TING, imp. DIS′CONNEC′TED, pp.: ADJ. without coherence or continuity. DIS′CONNEC′TION, n. *-nĕk′shŭn*, separation; want of union.

DISCONSOLATE, a. *dĭs-kŏn′sō-lāt* [L. *dis*, not; *consolātus*, comforted greatly, animated (see CONSOLE)]: without comfort; destitute of consolation; sorrowful; dejected; hopeless; cheerless. DISCON′SOLATELY, ad. *-lāt-lĭ*. DISCON′SOLATENESS, n. DISCON′SOLA′TION, n. *-lā′shŭn*, want of comfort.

DISCONTENT, a. *dĭs′kŏn-tĕnt′*, or DIS′CONTENT′ED [L. *dis*, not, and *content*]: not content; uneasy in mind; unquiet; dissatisfied: N. dissatisfaction; uneasiness; want of content. DIS′CONTENT′EDLY, ad. *-lĭ*. DIS′CONTENT′EDNESS, n. DIS′CONTENT′ING, a. giving no satisfaction; giving uneasiness. DIS′CONTENT′MENT, n. the state of being uneasy in mind.

DISCONTINUE, v. *dĭs′kŏn-tĭn′ū* [L. *dis*, not, and *continue:* F. *discontinuer*, to discontinue—*lit.*, to lose the cohesion of parts]: to break the continuance of; to leave off; to cause to cease; to abandon; to break off; to cease. DIS′CONTIN′UING, imp. DIS′CONTIN′UED, pp. *-ūd*. DIS′CONTIN′UANCE, n. *-ū-ăns*, or DIS′CONTINUA′TION, n. *-ū-ā′shŭn*, cessation; interruption. DISCONTINUEE′, n. *-tĭn-ū-ē′*, one whose possession of an estate is broken off or discontinued; one whose estate is subject to discontinuance. DISCONTIN′UOR, n. *-ėr*, one who deprives another of an estate by discontinuance. DIS′CONTINU′ITY, n. *-tĭ-nū′ĭ-tĭ*, disunion of parts; want of cohesion. DIS′CONTIN′UOUS, a. *-tĭn′ū-ŭs*, wanting in cohesion or continuity; gaping wide.—SYN. of 'discontinuance': intermission; disunion; separation; disruption; disjunction; termination.

DISCOPHORA, n. plu. *dĭs-kŏf′ŏ-ră* [Gr. *diskos*, a quoit; *phorĕō*, I carry]: an order of the medusæ or jelly-fish, so called from their form; an order of leeches which possess sucking-disks.

DISCORBINA, n. *dĭs-kawr-bī′na* [L. *discus*, a disk; *orbis*, a circle]: one of the *Rotalinæ*, having a turbinoid spire, with vesicular chambers, opening one into the other by slit-like apertures. The shell is occasionally coarsely, sometimes finely, and occasionally partially porous.

DISCORD, n. *dĭs′kawrd* [F. *discord;* OF. *descord*—from L. *discordiă*, disunion—from *dis*, asunder; *cordem*, the heart]: disagreement among persons; variance; strife; contention; want of harmony in music; disagreement of sounds; applied to sounds having no harmonical relation whatever; thus differing from *Dissonance*, which in music is applied to sounds in grammatically correct relation to each other though not consonant. DISCOR′DANT, a. *-kŏr′dănt* [F.—L.]: at variance with itself; disagreeing; not harmonious; harsh; jarring. DISCOR′DANTLY, ad. *-lĭ.* DISCOR′DANCE, n. *-dăns* [F.—L.], or DISCOR′DANCY, n. *-dăn sĭ*, disagreement; opposition. DISCOR′DING, a. disagreeing; inharmonious. DISCORD′FUL, a. in *OE.*, quarrelsome.—SYN. of 'discord': difference; opposition; dissension; clashing; dissonance; disagreement; disharmony; jarring;—of 'discordant': dissonant; inharmonious; incongruous; contradictory; repugnant; opposite; contrary.

DISCOUNSEL, v. *dĭs-kown′sĕl* [L. *dis*, opposite of, and *counsel*]: in *OE.*, to give opposite counsel or advice; to dissuade.

DISCOUNT, n. *dĭs′kownt* [OF. *descompter*, to make a back reckoning; *descompte;* F. *décompte*, abatement—from F. *des* for L. *dis*, apart, away: F. *compter*, to count—from L. *computārĕ*, to count]: something taken off or deducted; an allowance or deduction on the payment of money; the deduction of the interest on a sum lent at the time of lending; the sum so deducted. DISCOUNT′, v., sometimes DIS′-, to lend the amount named on a bill or note of exchange, less the interest for the time it has to run, at a certain rate per $100; *figuratively*, to draw beforehand on something expected, it may be at a loss. DISCOUNT′ING, imp. DISCOUNT′ED, pp. DISCOUNT′ER, n. one who discounts, or advances money on bills or notes of exchange. DISCOUNT′ABLE, a. *-ă-bl*, that may be discounted.—*Discount* is usually ascertained—in the case of bills of exchange, promissory-notes, and the like—by subtracting from the principal amount its interest, calculated from the date of payment until the date when the amount is due; but this, though sanctioned by usage, leads to an excess of charge, the interest being thus advanced to the lender before it has actually accrued. True discount is computed as follows: Suppose that $100 is advanced for one year at, say 5 per cent., the sum repayable at the end of the year in respect of this advance will be $105; therefore, $100 is the present value of $105 due a year hence; and from this conclusion it is easily deduced by proportion, that the value of $100 due a year hence is $95.24. Hence the true discount on $100 due in a year at 5 per cent., is $4.76. The simplest formulas are: (1) for the present value: present value = debt

÷ amount of \$1, or, present value = debt ÷ 100 per cent. + rate × time; (2) for the discount: discount = debt − present value. For example, let it be required to find the discount on \$100 due in 9 months at 8 per cent. Here the present value $= \frac{\$100}{\$1 + .06} = \$94.34$, and the discount $= \$100 - \$94.34 = \$5.66$.

An extension of the above formulas is necessary in computations connected with leases, reversions, etc., to be valued on the stricter principle of compound interest, for which, see INTEREST.

By discount is likewise understood the depreciation in value of a fixed investment; as when a railway share, on which say \$100 has been paid, can be sold for \$90 only, the 'discount' being thus 10 per cent.

The allowance made to a trader, under the name of discount, for prepayment of a debt, is usually greater than the current rate of interest, as the creditor receiving the money before it becomes due, secures himself against the insolvency of the debtor.

The rates of discount vary according to the demand for money and the nature of the security. The range in Britain is from 3 to 10 per cent., except in the case of doubtful bills or post obits bonds, when a much higher rate is exacted. Bills at and under three months' currency are usually charged a per cent. less than those of a long date. In the British colonies higher rates are allowed. In the United States rates vary in the different states; in the large eastern cities the average, formerly much higher than in Britain, is still somewhat higher; in the western states it is much higher.

DISCOUNTENANCE, v. *dĭs-kown'tĕ-năns* [L. *dis*, not, and *countenance:* OF. *descontenancer*, to abash]: to discourage; to restrain by cold treatment, frowns, or arguments: N. cold treatment; unfriendly regard; disapprobation. **DISCOUN'TENANCING**, imp. **DISCOUN'TENANCED**, pp. *-nănst*. **DISCOUN'TENANCER**, n. *-năn-sėr*, one who.

DISCOURAGE, v. *dĭs-kŭr'āj* [L. *dis*, not, and *courage:* OF. *descourager*, to dishearten]: to depress the spirits; to dishearten; to dissuade; to deter from. **DISCOUR'AGING**, imp. **DISCOUR'AGED**, pp *-ājd*. **DISCOUR'AGEMENT**, n. *-āj-mĕnt*, the act of depriving of confidence; that which destroys or depresses courage: anything which deters from. **DISCOUR'AGINGLY**, ad. *-lĭ*. **DISCOUR'AGER**, n. *-ā-jėr*, one who disheartens or depresses the courage of another.—SYN. of 'discourage': to deter; depress; dispirit; deject; disfavor; discountenance.

DISCOURSE, n. *dĭs-kōrs'* [F. *discours*—from mid. L. *discursus*, conversation, discussion—from L. *dis*, asunder; *cursus*, a running: It. *discorso*, speech—*lit.*, a running or shaking about or over a thing]: conversation; communication of thoughts by words; a treatise; a dissertation; a sermon: V. to talk or converse; to reason; to treat of; to converse formally. **DISCOUR'SING**, imp. **DISCOURSED'**, pp. *-kōrst'*. **DISCOUR'SER**, n. *-sėr*, one who. **DISCOUR'SIVE**, a. *-kor'sĭv*, reasoning; containing dialogue; communicative.—

SYN. of 'discourse, n.': colloquy; conference; dialogue; speech; language; talk; homily; lecture.

DISCOURTEOUS, a. *dĭs-kėrt′e-ŭs* or *dĭs-kėrt′yŭs* [L. *dis*, not, and *courteous:* OF. *discortois*, discourteous]: rude; uncivil; wanting in good manners. DISCOURT′EOUSNESS, n. *-ker′tĕ-ŭs-nĕs* or *-kėrt′yŭs-nĕs*, the state of being discourteous; incivility. DISCOURT′EOUSLY, ad. *-lĭ*, in a discourteous manner; uncivilly. DISCOUR′TESY, n. *-kėr′tĭ-sĭ*, rudeness of behavior or language; incivility; ill manners.

DISCOUS: see under DISK.

DISCOVER, v. *dĭs-kŭv′ėr* [L. *dis*, and *cover:* OF. *discouvrir*, to discover]: to lay open to view; to reveal or make known; to bring to light to find out, as by labor or research; to have the first sight of; to detect. DISCOV′ERING, imp. DISCOV′ERED, pp. *-ėrd*. DISCOV′ERER, n. one who. DISCOV′ERABLE, a. *-ėr-ă-bl*, that may be found out or made known. DISCOV′ERY, n. *-ėr-ĭ*, a bringing to light or making known; that which is made known; the act of finding out; the thing found out or revealed.—SYN. of 'discover': to disclose; divulge; reveal; uncover; tell; exhibit; show; manifest; communicate; impart; espy; ascertain.

DISCOVERY, BILL OF: process of a court directing the defendant in a suit to disclose certain facts within his knowledge, or to produce specified deeds, writings, books, or other things in his power or possession, in order to maintain the right or title of the party asking it in some proceeding in another court. The person on whom the demand is made is protected by the court of which the bill is asked against improper proceedings. He cannot be compelled to make the discovery when the act would subject him to criminal proceedings or to a forfeiture, and he can interpose objections on the grounds that the plaintiff has no interest in the subject-matter or title to the discovery required, that he is not bound to discover his own title, that the discovery is not material in the suit, that the defendant is not answerable to the plaintiff, but that some other person has the right to call for the discovery, and many others. In the United States this form of proceeding is almost entirely abolished, and in practice either party may nearly everywhere obtain a judicial order for the examination of a party to an action before trial. Beside that, both parties may be made witnesses, and compelled by a simple order of the court to produce any books, papers, or other things deemed material to the proceeding.

DISCREDIT, n. *dĭs-krĕd′ĭt* [F. *discrédit*, disrepute—from L. *dis*, not; *credĭtus*, trusted, believed]: want or loss of credit; disgrace; reproach; dishonor; want of good reputation or credit: V. not to believe or credit; to esteem of no importance; to disgrace; to deprive of credibility; to make less reputable or honorable. DISCRED′ITING, imp. DISCRED′ITED, pp. DISCRED′ITABLE, a. *-ĭt-ă-bl*, disgraceful; disreputable; injurious to good name. DISCRED′ITABLY, ad. *-ă-blĭ*.—SYN. of 'discredit, n.': disesteem; disrepute; scandal; disbelief; distrust.

DISCREET, a. *dĭs-krīt'* [F. *discret*, prudent—from L. *discrētus*, separated, distinguished—from *dis*, *crētus*, distinguished]: prudent; not rash; wise in avoiding errors or evil; modest; circumspect. DISCREET'LY, ad. *-lĭ*, in a discreet manner; prudently. DISCREET'NESS, n. the quality of being discreet. DISCRETION, n. *dĭs-krĕsh'ŭn* [F.—L.]: prudence; wise conduct and management; good discernment; liberty or power of acting without control; unconditional power over, as *at his own discretion*. DISCRE'TIONARY, a. *-ėr-ĭ*, unrestrained; left in certain circumstances to act according to one's own judgment, as an ambassador with *discretionary powers*. TO SURRENDER AT DISCRETION, a submit without terms.

DISCREPANCE, n. *dĭs-krĕp'ăns* or *dĭs'-*, or DISCREP'ANCY, n. *-ăn-sĭ* [L. *discrep'ens*, or *discrepen'tem*—from *dis*, intensive; *crĕpans*, creaking, jarring: It. *discrepanza*]: disagreement; difference; contrariety. DISCREP'ANT, a. *-ănt*, disagreeing; contrary.

DISCRETE, a. *dĭs-krēt'* [L. *discrētus*, separated—from *dis*, asunder; *crētus*, separated (see DISCREET)]: distinct; disjoined; not continuous. DISCRE'TIVE, a. *-krē'tĭv*, disjunctive; denoting separation or opposition. DISCRE'TIVELY, ad. *-lĭ*.

DISCRETION, DISCRETIONARY: see under DISCREET.

DISCRIMINATE, v. *dĭs-krĭm'ĭ-nāt* [L. *discrimĭnātus*, divided, separated—from *discrīmen*, that which separates or divides two things—from *dis*, asunder; *cerno*, I separate]: to observe and mark the difference between; to distinguish, as by some note or mark; to make a difference or distinction. DISCRIM'INATING, imp. DISCRIM'INATED, pp. DISCRIM'INATOR, n. *-nā-tėr*, one who. DISCRIM'INA'TINGLY, ad. *-lĭ*. DISCRIM'INATIVE, a. *-nā-tĭv*, that makes or observes the mark of distinction or difference. DISCRIM'INA'TIVELY, ad. *-lĭ*. DISCRIM'INA'TION, n. *-shŭn*, the act of distinguishing; the state of being distinguished; the faculty of distinguishing; acuteness; discernment. DISCRIM'INA'TORY, a. *-tėr-ĭ*, that makes the mark of distinction.—SYN. of 'discrimination': penetration; judgment; discretion; clearness; distinction.

DISCROWN, v. *dĭs-krown'* [L. *dis*, and *crown*]: to depose a sovereign; to deprive a sovereign of his crown.

DISCUBITORY, a. *dĭs-kū'bĭ-tėr-ĭ* [L.L. *discubitorius*—from L. *discumbo*, I lie down]: fitted or intended for the posture of leaning or reclining.

DISCUMBENCY, n. *dĭs-kŭm'bėn-sĭ* [L. *discumbens*, p.pr. of *discumbo*, I lie down]: the act or practice of reclining at meals, after the fashion of the ancients.

DISCURE, v. *dĭs-kūr'* [F. *découvrir*, to uncover]: in *OE.*, to discover; to reveal. DISCU'RING, imp. DISCURED', pp. *-kūrd'*.

DISCURSIVE, a. *dĭs-kėr'sĭv* [F. *discursif*—from mid. L. *discursus*, discussion—from L. *dis*, asunder; *cursus*, a running—*lit.*, moving to and fro from one thing to another]: irregular; moving about; desultory; argumentative. DISCUR'SIVELY, ad. *-lĭ.* DISCUR'SIVENESS, n.

DISCUS, n. *dĭs'kŭs* [L. *discus;* Gr. *diskos*, a round plate of metal or stone (see DISK)]: a flat piece of metal or stone to be thrown in play; a quoit.

DISCUSS, v. *dĭs-kŭs'* [L. *discussus*, struck asunder, dispersed—from *dis*, asunder; *quassus*, shaken: F. *discussif*, discussive: It. *discussare*, to examine, to sift—*lit.*, to shake and examine on all sides]: to debate; to argue a question with the view of clearing it of doubts and difficulties; to divide and consume an article of food or drink, as to *discuss a fowl, of bottle of wine*, etc. DISCUS'SING, imp. DISCUSSED', pp. *-kŭst'*. DISCUS'SION, n. *-kŭsh'ŭn* [F.—L.]: a debate; the arguing of a point with the view to elicit truth. DISCUS'SIVE, a. *-kŭs'sĭv*, having the power to resolve; having the power to dissolve or disperse, as a tumor: N. a medicine that disperses a tumor. DISCUS'SER, n. *-sėr*, one who, or that which—SYN. of 'discuss': to argue; dispute; deliberate; contend; examine; ventilate; sift; search.

DISCUS'SION, in Scotch Law: technical term for the act of the creditor in demanding and, so far as possible, enforcing, payment from the principal debtor, first.

DISCUTIENT, a. *dĭs-kū'shĭ-ĕnt* or *dĭs-kū'shĕnt* [L. *discutĭen'tem*, striking asunder (see DISCUSS)]: dispersing morbid matter: N. a medicine or application which disperses a tumor.

DISDAIN, v. *dĭs-dān'* [OF. *desdaigner;* F. *dédaigner*—from It. *disdegnare*, to despise, to treat with disdain—from L. *dis*, not; *dignus*, worthy]: to deem worthless; to consider to be unworthy of notice, etc.; to scorn; to contemn; to despise: N. contempt; scorn; detestation of what is mean and dishonorable. DISDAIN'ING, imp. DISDAINED', pp. *-dānd'*. DISDAIN'FUL, a. *-fûl*, expressing disdain. DISDAIN'FULLY, ad. *-lĭ.* DISDAIN'FULNESS, n. haughty scorn; contempt;— SYN. of 'disdain, n.': haughtiness; pride; arrogance.

DISDIAPASON, n. *dĭs-dī-a-pā'zon* [Gr. *dis*, twice, twofold; Eng. *diapason* (q.v.)]: in *music*, an interval of two octaves; a fifteenth. It is also written *Bisdiapason*.

DISEASE, n. *dĭz-ēz'* [OF. *desaise*, sickness—from *des* for L. *dis*, apart; F. *aise;* It. *agio*, ease, convenience (see EASE) —*lit.*, the want of ease]: any deviation from health; sickness; illness; disorder in any part of the body or mind. In a strictly scientific sense, there may be disease without pain or uneasiness in the ordinary meaning of these words, but hardly without functional disturbance or incapacity of some kind. It is, therefore, necessary to include in the definition of disease only the diminution of functional power, whether attended or not by suffering, and the scientific and practical ideas of the word will closely correspond. It must be admitted that slight structural and functional deviations from the state of health are sometimes unnoticed; but only because they are slight, and because the functions to which they extend are not habitually in use to the full extent. A great deal of unnecessary obscurity is found, especially in continental European writers, in discussing the abstract idea of disease, which has been connected with the intangible subtleties of the most abstruse and metaphysical philosophy, by regarding it as dependent upon the idea of life and of the vital force. Many authorities have thus generalized disease into a separate active principle, opposed to, and everywhere seeking to destroy, the principle of health; and Paracelsus was hardly more open to objection on the ground of absurdity than many others of his countrymen, when, in his picturesque and at the same time mystical manner, he endowed the vital principle with a kind of personality, and spoke of disease as due to the whims and caprices of a displeased and resentful Archæus, a notion still further developed by Van Helmont. It is common to treat of disease as being *functional* or *organic,* i.e., evidenced by changes of function, or by changes of structure; but function and structure are so closely allied in fact and in nature, that the more this distinction is examined, the more vague and impalpable it becomes, and it can therefore be only a provisional and conventional arrangement. The classification and arrangement of diseases according to their external characters has been termed Nosology (q.v.); while the observation of their more intimate and less superficial relations in connection with their causes and results, is called Pathology (q.v.); both of these sciences, of course, being kept in view in the healing art or Medicine (q.v.), of the more practical portion of which these are the pillars. **Disease**, v. to afflict with disease; to impair any part of the body; to make morbid. **Diseas'ing**, imp. **Diseased'**, pp. *-ēzd'*. **Diseas'edness**, n. *-ēz'ĕd-nĕs*, the state of being diseased; a morbid state.—**Syn.** of 'disease, n.': ailment; disorder; distemper; malady; complaint; indisposition.

DISEASES OF PLANTS: subject interesting equally in its scientific and in its economic or practical relations, but in regard to the most important parts of which much obscurity still exists. Enough is known to show an analogy between the kinds of disease to which plants are subject and those of animals, both in their nature and their causes, yet necessarily with wide differences. Plants, like animals, are liable to suffer from unsuitable external circumstances, as of temperature, drought, or moisture, etc.; they are liable, like animals, to suffer from deficiency of food, from excess of it, or from being compelled to subsist on improper kinds of it, or too exclusively on some particular kind. They often suffer much from vegetable parasites, chiefly fungi, and from multitudes of minute animals, which, without eating them up, destroy organs essential to their health, or prey upon their juices. The constitutions of plants are accommodated to particular temperatures, and they do not flourish when the temperature is for any considerable time much above or much below certain limits, which limits differ widely for different species. Light is of the greatest importance to vegetable life, and a want or deficiency of it speedily produces an unhealthful condition, the proper chemical changes not taking place in the juices of the plant; so that in gloomy seasons, when the deficiency of light is accompanied with excess of moisture plants are very liable to the attacks of vegetable parasites and of minute animal tribes.

Excess of nutriment, causing an extreme rapidity of growth, sometimes produces an unhealthful condition in particular parts of plants, in which a greater amount of tissue is developed in a single season than can be thoroughly matured.—Manures, injudiciously and unsuitably applied, are often productive of disease. Putrescent matter coming in contact with the roots of many plants, is very injurious to them, and causes *canker*. Contagion, as a cause of disease in plants, if not fully demonstrated, is rendered highly probable by such facts as the memorable prevalence of the potato disease, and the rapid spread of the vine disease (*oïdium*); nor does the existence of particular fungi in the diseased plants materially affect this probability.

With regard to the diseases of plants generally, little has been hitherto found practicable in the way of cure, and prevention is the object chiefly aimed at in all investigations.

For some of the most important diseases of plants and the most destructive parasitic fungi, see their titles.

DISEDGE, v. *dĭs-ĕj'* [L. *dis*, not, and *edge*]: to deprive of an edge; to blunt; to dull.

DISEMBARK, v. *dĭs'ĕm-bârk'* [OF. *desembarquer*, to unload a ship—from *des* for L. *dis*, the opposite of, and *embarquer*, to embark (see EMBARK)]: to put on shore from a ship; to go on shore; to land. DIS'EMBARK'ING, imp. DIS'EMBARKED', pp. *-bârkt'*. DISEM'BARKA'TION, n. *-kā'-shŭn*, the act of disembarking; also DIS'EMBARK'MENT, n.

DISEMBARRASS, v. *dĭs'ĕm-băr'răs* [OF. *desembarrasser*—from *des* for L. *dis*, asunder; *embarrasser*, to embarrass (see EMBARRASS)]: to free from difficulty or perplexity. DIS'EMBAR'RASSMENT, n. the act of extricating from difficulty or perplexity.

DISEMBELLISH, v. *dĭs'ĕm-bĕl'ĭsh* [L. *dis*, asunder, and *embellish*]: to deprive of decorations.

DISEMBODY, v. *dĭs'ĕm-bŏd'ĭ* [L. *dis*, asunder, and *embody*]: to free from the body; to discharge from military service, as soldiers or militia.

DISEMBOGUE, v. *dĭs'ĕm-bōg'* [Sp. *desembocar;* Norm. F. *désemboucher*, to flow into the sea—from Sp. *des* for L. *dis*, asunder, apart; Sp. *embocar*, to enter the mouth: F. *bouche*, mouth: L. *bucca*, the cheek when inflated]: to pour out at the mouth, as a river into a sea or lake; to vent; to flow out. DIS'EMBOG'UING, imp. *-bōg'ĭng*. DIS'EMBOGUED', pp. *-bōgd'*. DIS'EMBOGUE'MENT, n. *-bōg'mĕnt*, discharge of waters into the ocean or a lake. DISEMBOUCHURE, n. *dĭs-âng'bô-shôr'* or *dĭs-ĕm'bô-shôr* [F. *embouchure*, the mouth of a river]: the mouth of a river; the discharge of the waters of a river.

DISEMBOWEL, v. *dĭs'ĕm-bow'ĕl* [L. *dis*, intensive, and *embowel*]: to take out the bowels; to deprive of the bowels. DIS'EMBOW'ELING, imp. DIS'EMBOW'ELED, pp. *-bow'ĕld:*

ADJ. having the bowels taken or drawn out; taken the bowels from out. DIS'EMBOW'ELMENT, n. the state of the person who has had his bowels drawn out.

DISEMBROIL, v. *dĭs'ĕm-broyl'* [L. *dis*, not, and *embroil*]: to free from confusion; to disentangle.

DISENCHANT, v. *dĭs'ĕn-chănt'* [L. *dis*, asunder, and *enchant:* F. *désenchanter*]: to deliver from the power of charms or spells; to free from fascination or delusion. DIS'ENCHANT'ER, n. one who, or that which. DIS'ENCHANT'MENT, n. act of disenchanting; state of being disenchanted.

DISENCUMBER, v. *dĭs'ĕn-kŭm'bėr* [L. *dis*, the opposite of, and *encumber*]: to free from any obstruction or encumbrance. DIS'ENCUM'BRANCE, n. *brăns.*

DISENGAGE, v. *dĭs'ĕn-gāj'* [OF. *desengager*—from *des* for L. *dis*, asunder; *engager*, to engage (see ENGAGE)]: to free; to loose; to separate; to disunite; to clear from impediments; to liberate from a promise or obligation; to withdraw the affections. DIS'ENGA'GING, imp. DIS'ENGAGED', pp. *-gājd':* ADJ. being at leisure; not particularly occupied. DIS'ENGA'GEDNESS, n. *-gā'jĕd-nĕs.* DIS'ENGAGE'MENT, n. a setting free; state of being disengaged or set free. —SYN. of 'disengage': to extricate; detach; disentangle; liberate; clear; wean; withdraw; release.

DISENNOBLE, v. *dĭs'ĕn-nō'bl* [L. *dis*, asunder, and *ennoble*]: to deprive of that which ennobles.

DISENROLL, v. *dĭs'ĕn-rōl'* [L. *dis*, asunder, and *enrol*]: to mark off or erase from a list or roll.

DISENTAIL, v. *dĭs'ĕn-tāl'* [L. *dis*, asunder, and *entail*]: to free land, etc., from the law of entail by a legal process.

DISENTANGLE, v. *dĭs'ĕn-tăng'gl* [L. *dis*, the opposite of, and *entangle*]: to unfold; to unravel; to set free from difficulties or impediments; to extricate. DIS'ENTAN'GLING, imp. DIS'ENTAN'GLED, pp. *-tăng'gld.* DIS'ENTAN'GLEMENT, n. *-gl-mĕnt.*—SYN. of 'disentangle': to disengage; detach; untwist; loose; disembarrass; evolve; clear; disembroil; separate; free.

DISENTHRALL: see DISINTHRALL.

DISENTHRONE, v. *dĭs'ĕn-thrōn'* [L. *dis*, asunder, and *enthrone*]: to depose from sovereign power.

DISENTITLE, v. *dĭs'ĕn-tī'tl* [L. *dis*, and *entitle*]: to deprive of title or claim.

DISENTOMB, v. *dĭs'ĕn-tôm'* [L. *dis*, and *entomb*]: to take out of a tomb; to disinter.

DISESPOUSE, v. *dĭs'ĕs-powz'* [L. *dis*, asunder, and *espouse*]: to release or separate after espousal, or after plighted faith.

DISESTABLISH, v. *dĭs'ĕs-tăb'lĭsh* [L. *dis*, asunder, and *establish*]: to remove from being established; to unsettle; to overthrow. DIS'ESTAB'LISHMENT, n. the act of removing from being established or connected with the state, as a national church.

DISESTEEM, n. *dĭs'ĕs-tēm'* [L. *dis*, and *esteem*]: want of esteem; slight dislike: V. to consider with disregard or slight contempt.

DISFAVOR, n. *dĭs-fā'vėr* [L. *dis*, and *favor:* F. *défaveur*]: the state of being not acceptable; dislike; displeasure in a slight degree; a disobliging or ill act; want of beauty: V. to withhold countenance or support; to show disapprobation.

DISFIGURE, n. *dĭs-fĭg'ŭr* [OF. *desfigurer*—from *des* for *dis*, asunder; *figurer*, to figure (see FIGURE)]: to mar or injure the external appearance of a person or thing; to impair shape, beauty, or excellence. DISFIG'URING, imp. DISFIG'URED, pp. a. *-ŭrd*, changed to a worse form or appearance; impaired. DISFIG'UREMENT, n. DISFIG'URA'TION, n. *-ū-rā'shŭn*, the act of marring or injuring external form; state of being disfigured.—SYN. of 'disfigure': to deface; deform; mar; injure.

DISFOREST, v. *dĭs-fŏr'ĕst* [L. *dis*, asunder, and *forest*]: to reduce from the privileges of a forest to the state of common ground; to throw open to common purposes; also DIS'AFFOR'EST, which see.

DISFRANCHISE, v. *dĭs-frăn'chĭz* [L. *dis*, asunder, and *franchise*]: to deprive of a charter; to deprive of the right of voting in the election of a member of parliament, etc.; to deprive of the rights of a free citizen; to deprive a town of its privilege of sending a representative to parliament. DISFRAN'CHISING, imp. *-chĭz-ĭng.* DISFRAN'CHISED, pp. *-chĭzd*, deprived of certain rights and privileges. DISFRAN'CHISEMENT, n. *-chĭz-mĕnt*, the act of depriving of certain rights and privileges.

DISFURNISH, v. *dĭs-fėr'nĭsh* [L. *dis*, asunder, and *furnish*]: to strip of furniture, apparatus, etc.; to deprive of.

DISGORGE, v. *dĭs-gŏrj'* [F. *dégorger;* OF. *desgorger*—from *des* for L. *dis*, asunder, and *gorge* (see GORGE)]: to eject from the stomach, etc.; to vomit; to pour forth; to yield up unwillingly what has been improperly or unjustly taken possession of. DISGORGE'MENT, n. the act of disgorging or yielding up unwillingly; the thing so yielded.

DISGRACE, n. *dĭs-grās'* [F. *disgrâce*—from L. *dis*, asunder; F. *grâce*—from L. *grātĭă*, grace, favor]: state of being out of favor; shame; dishonor; great discredit; cause of shame: V. to put out of favor; to dishonor; to bring reproach upon; to bring to shame. DISGRA'CING, imp. DISGRACED', pp. *-grāst'*. DISGRACE'FUL, a. *-fûl*, shameful; dishonorable. DISGRACE'FULLY, ad. *-lĭ*. DISGRACE'FULNESS, n. ignominy; shamefulness. DISGRACIOUS, a. *dĭs-grā'shŭs*, ungracious; unpleasing.—SYN. of 'disgrace, n.': discredit; opprobrium; disesteem; disfavor; reproach; ignominy; disparagement; reproach; infamy;—of 'disgrace, v.': to discredit; degrade; abase; disparage; defame; debase.

DISGUISE, v. *dĭs-gīz'* [OF. *desguiser;* F. *déguiser*, to conceal or dissemble—from F. *des* for L. *dis*, apart; *guise*, manner, fashion (see GUISE)]: to conceal the personal appearance by changing the outward attire; to hide the feelings by an unusual or assumed appearance; to alter the form of: N. a dress intended to conceal the person; a mask; a false appearance or show. DISGUI'SING, imp. DISGUISED', pp. *-gīzd'*. DISGUI'SER, n. *-zer*, one who. DISGUI'SEDLY, ad. *-gī'zĕd-lĭ*. DISGUISEMENT, n. *dĭs-gīz'mĕnt*, dress of concealment.—SYN. of 'disguise, v.': to dissemble; secrete; conceal; hide; falsify; counterfeit; masque.

DISGUST, n. *dĭs-gŭst'* [OF. *desgoust*, disgust—from It. *disgusto*—from L. *dis*, asunder; *gustus*, a taste, a relish: F. *dégouter*, to disgust]: aversion to food or drink or anything disagreeable; aversion or strong dislike, excited by the conduct or manners of others: V. to excite aversion in; to displease; to offend the mind. DISGUST'ING, imp.: ADJ. exciting disgust; highly displeasing. DISGUST'ED, pp. DISGUST'INGLY, ad. *-lĭ*. DISGUST'FUL, a. *-fûl*, causing disgust; nauseous; hateful. DISGUST'FULLY, ad *-lĭ*. DISGUST'FULNESS, n.—SYN. of 'disgust, n.': dislike; aversion; distaste; disinclination; repugnance; displeasure.

DISH, n. *dĭsh* [AS. *disc*, a plate: L. *discus*, a flat circle of stone, wood, or metal: Gr. *diskos*, a tray: Ger. *tisch*, a table]: any article of domestic use, broad and open, used for serving up food; also the contents of any such vessel; a sort of trough in which miners measure ore: V. to put into a dish. DISH'ING, imp. DISHED, pp. *dĭsht*. DISH CLOTH or DISH-CLOUT, *-klowt*, a cloth used for washing or wiping dishes. DISH-COVER, a cover of metal or earthenware for retaining the heat. DISH-WATER, warm water in which dishes are washed. DISH'FUL, n. *-fûl*, as much as a dish can hold.

DISH, v. *dĭsh* [Gael. *disne*, a die, dice; *disnein*, a dice-box: Scot. *dish*, to render useless]: in *OE.* and *familiar slang*, to render useless; to do for; to ruin. DISHED, a. *dĭsht*, having thrown the die and lost; rendered useless; done for; ruined. DISHED OUT OF IT, deprived of it by unfair means; cheated out of it. *Note.*—DISH is perhaps only a provincial pronunciation of DIGHT, which see.

DISHABILLE, n. *dĭs'ă-bēl':* an *OE.* spelling of DESHABILLE, which see; a loose dress.

DISHABIT, v. *dĭs-hăb'ĭt* [L. *dĭs*, asunder, and *habit*]: in *OE.*, to throw out of its usual and proper place; to drive from a dwelling. DISHAB'ITING, imp. DISHAB'ITED, pp. *-ĭ-tĕd.*

DISHEARTEN, v. *dĭs-hârt'n* [L. *dis*, asunder, and *heart*]: to discourage; to depress; to impress with dread or fear. DISHEART'ENING, imp. *-hârt'nĭng*. DISHEART'ENED, pp. *-hârt'nd.*—SYN. of 'dishearten': to deter; dispirit; deject; terrify.

DISHEVEL, v. *dĭ-shĕv'ĕl* [OF. *descheveler;* F. *décheveler*, to spread the hair in disorder—from F. *cheveu;* OF. *chevel;* L. *capillus*, a hair, the hair]: to spread the hair loosely, or to suffer it to hang so; to disorder the hair. DISHEV'ELLING, imp. DISHEV'ELLED, pp. *-ĕld*, spread or flowing in disorder.

DISHING: see under DISH 1.

DISHONEST, a. *dĭs-ŏn'ĕst* [OF. *deshonneste*—from *des* for L. *dis*, not; *honneste*, honest]: not trustworthy; faithless; fraudulent; having a disposition to cheat or defraud; disgraceful; in *OE.*, unchaste; lewd. DISHON'ESTLY, ad. *-lĭ*. DISHON'ESTY, n. *-tĭ*, a disposition to defraud or cheat; deceit; betrayal of trust; faithlessness; want of integrity.

DISHONOR, n. *dĭs-ŏn'ėr* [F. *deshonneur*, dishonor, and *deshonorer*, to dishonor—from *des* for L. *dis*, apart; *honneur*, honor (see HONOR)]: want or loss of honor; disgrace; any stain or blemish on the reputation; shame; ignominy: V. to disgrace; to bring reproach or shame upon; to lessen reputation; to degrade; to seduce; to fail to meet an acceptance or bill of exchange. DISHON'ORING, imp. DISHON'ORED, pp. *-ėrd*. DISHON'ORER, n. *-ėr-ėr*, one who. DISHON'ORABLE, a. *-ėr-ă-bl*, shameful; disgraceful; base; approaching to vileness; destitute of honor. DISHON'ORABLY, ad. *-blĭ*. DISHON'ORABLENESS, n. *-bl-nĕs*.—SYN. of 'dishonor, n.': reproach; discredit; ignominy; censure; opprobrium;—of 'dishonor, v.': to shame; debase; debauch; pollute; stain; violate.

DIS'HONOR OF A BILL: refusal or failure to meet a bill. When the drawee (person on whom a bill is drawn) declines to accept it or to pay it, he is said to dishonor it. The act of drawing or of indorsing a bill implies an obligation to pay it in the last instance, and the person in whose favor it is drawn has thus recourse against the drawer and indorsers, should the drawee fail to accept or to pay. In order to preserve this recourse, however, it is indispensable that notice of dishonor be given to the drawer and indorsers. No particular form of notice is requisite. The notice must be such as to identify the bill, and to inform the party to whom it is given of the protest, a copy of which ought to accompany it. If the notice is put into the post-office, and properly addressed, it is sufficient; even verbal notice, if clear, will suffice. In the case of foreign bills, the period within which notice must be given is regulated by the usages and customs of merchants. Any delay which can fairly be ascribed to neglect or omission, and is not justified by the circumstances of the case, will be fatal to the bill-holder's claim for recourse. In inland bills and notes, notice must, in the general case, be sent the next day, where the parties reside in the same place, and by the next mail, if they reside at a distance.

DISHORN, v. *dĭs-hawrn'* [L. *dis*, asunder, and *horn*]: to deprive or strip of horns.

DISHORSE, v. *dĭs-hŏrs'* [L. *dis*, asunder, and *horse*]: to dismount; to be taken off, or to come off, a horse's back.

DISIDÆ, n. plu. *dī'sĭ-dē*: family of orchids, tribe *Ophreæ*.

DISINCLINE, v. *dĭs'ĭn-klīn'* [L. *dis*, not, and *incline*]: to dislike; to excite a slight aversion to; to make disaffected. DIS'INCLI'NING, imp. DIS'INCLINED', pp. *-klīnd'*. DISINCLINATION, n. *dĭs'ĭn-klĭ-nā'shŭn*, dislike or slight aversion to; want of desire or affection for.—SYN. of 'disinclination': disaffection; alienation; unwillingness; dislike; aversion, repugnance.

DISINCORPORATE, v. *dĭs'ĭn-kŏr'pō rāt* [L. *dis*, asunder, and *incorporate*]: to deprive of corporate powers. DIS'INCORPORA'TION, n. *-rā'shŭn*, deprivation of the rights and privileges enjoyed by a corporate body.

DISINFECT, v. *dĭs'ĭn-fĕkt'* [L. *dis*, asunder, and *infect:* F. *désinfecter*]: to purify from contagious matter; to cleanse; to free from infection, DIS'INFEC'TING, imp. DIS'INFEC'TED, pp. DIS'INFEC'TION, n. *-fĕk'shŭn*, purification from contagious matter. DIS'INFEC'TANT, n. *-tănt*, a substance which destroys smells and their poisons by acting chemically; any substance that destroys infection or infectious matter: see DEODORIZE. Disinfectants are, strictly speaking, agents which can prevent infectious diseases from spreading, by destroying their specific poisons. The term is, however, often loosely applied to all substances which destroy or neutralize bad odors, though not all such have the power of counteracting infection. Many infectious diseases have now been proved, and all are believed, like putrefaction (q.v.), to be due to special micro-organisms found in different parts of the body, and communicable in different ways in different diseases. See GERM THEORY. The action of disinfectants is therefore exactly analogous to that of antiseptics (q.v.), and consists in the destruction of low forms of life. But the two classes do not necessarily correspond, as the same substance may have unequal poisonous effects on different forms. It is of the utmost importance to discover the conditions which are most deadly to each disease-poison. and to apply them, if possible, within as well as without the diseased body. But little has yet been done in this direction.

The chief measures to prevent the spread of infectious disease may be summed up as follows: (1) Complete isolation of the patient during the whole attack, from all but necessary attendants; (2) thorough disinfection of his discharges, and of all articles used by him; (3) thorough disinfection of the patient himself, his room, bedding, etc., at the end of the illness.

When applicable, heat is the most convenient and satisfactory disinfectant. Infected water and milk are not known to have communicated disease after being boiled. Clothes, bedding, etc., can be rendered harmless by boiling, or by exposure for some hours to air or steam, at a temperature from 212° to 230° F. But these methods cannot. of course, be applied to patients or rooms; here chemical agents are used. (*a*) Of *gaseous* disinfectants, the most important are sulphurous acid (fumes of burning sulphur); chlorine, obtained by exposing bleaching-powder (chloride of lime) to the air; nitrous acid, by allowing nitric acid to act on copper. These all are deodorants, even when present in small quantity in the air, and may have some slight disinfecting action also; but none of them can act as thorough disinfectants, unless evolved in such amount as to render the air irrespirable. (*b*) Of *liquid* disinfectants: solutions of potassic permanganate (Condy's fluid, see MANGANESE); perchloride of iron (Ellerman's deodorizing fluid); and nitrate of lead (Ledoyen's disinfecting fluid); but these liquids are not true disinfectants, and are merely serviceable in deodorizing by *fixation*. The employment of fumigating pastilles, burning brown paper, and fumigations with camphor, benzoin, mastic, amber, lavender, and other odoriferous substances, is serviceable merely in cloaking over the offensive, fetid, and hurtful gases, and should never be resorted to unless in conjunction with the use of other agents possessing the properties of true disinfectants. Recently, much doubt has been thrown on the disinfecting powers of chlorine and carbolic acid. Practically it is found that only a thorough fumigation with chlorine destroys disease-germs; simply spreading chloride of lime about an apartment does not suffice. Carbolic acid will not destoy disease-germs by its mere fumes; it must be applied directly to them and with strong solution. See CARBOLIC ACID: MANGANESE.

DISINGENUOUS, a. *dĭs'ĭn-jĕn'ū-ŭs* [L. *dis*, not, and *ingenuous*]: not open or candid; not frank; unfair; meanly artful. DIS'INGEN'UOUSLY, ad. *-lĭ*. DIS'INGEN'UOUSNESS, n., or DISIN'GENU'ITY, n. *-jĕ-nū'ĭ-tĭ*, insincerity; want of candor.

DISINHERIT, v. *dĭs'ĭn-hĕr'ĭt* [L. *dis*, asunder, and *inherit*]: to cut off from an inheritance; to deprive of hereditary right. DIS'INHER'ITING, imp. DIS'INHER'ITED, pp. DIS'INHER'ISON, n. *-hĕr'ĭ-sŭn*, or DIS'INHER'ITANCE, n. *-ĭ-tăns*, the act of cutting off from hereditary succession; the act of disinheriting; the state of being disinherited.

DISINTEGRATE, v. *dĭs-ĭn'tĕ-grāt* [L. *dis*, asunder; *intĕgrātus*, made anew or afresh—from *intĕger*, whole, entire (see INTEGER)]: to separate a whole body or substance by a gradual breaking into parts, as by the action of the atmosphere; to crumble. DISIN'TEGRATING, imp. DISIN'TEGRATED, pp. DISIN'TEGRA'TION, n. *-grā'shŭn*, the wearing down of rocks by the action of air or moisture, or other atmospheric influences; the process by which any body is broken up into parts; the condition of being broken up into parts. DISIN'TEGRABLE, a. *-tĕ-gră-bl*, that may be separated into small portions.

DISINTER, v. *dĭs'ĭn-tėr'* [L. *dis*, the opposite of, and *inter*]: to take out of the earth or grave; to unbury; to bring to light; to disclose what was formerly in obscurity. DIS'INTER'RING, imp. DIS'INTERRED', pp. *tėrd'*. DIS'INTER'MENT, n. the act of taking out of the earth.

DISINTERESTED, a. *dĭs-ĭn'tėr-ĕst-ĕd* [OF. *desinteressé*, discharged, lost all interest in—from *des* for L. *dis*, apart; *interessé*, interested in (see INTERESTED)]· free from selfish motives; having no personal advantage; unbiassed DISIN'TEREST'EDLY, ad. *-lĭ*. DISIN'TEREST'EDNESS, n. the state of having no personal interest or advantage in a matter freedom from bias or prejudice.—SYN. of 'disinterested': impartial; uninfluenced; uninterested; indifferent; unprejudiced.

DISINTHRALL, or DISENTHRALL, or DISINTHRAL, v. *dĭs'ĕn-thrawl'* [L. *dis*, the opposite of, and *inthrall*]· to free from slavery or servitude; to rescue from oppression. DIS′-INTHRAL′LING, imp. DIS′ENTHRALLED′, pp. *-thrawld.* DIS′-INTHRAL′MENT, n. liberation from bondage.

DISJOIN, v. *dĭs-joyn′* [OF. *desjoindre,* to disunite—from L. *disjungĕrĕ*—from L. *dis,* asunder; *jungo,* I join (see JOIN)]: to put asunder parts united or joined together; to part; to separate; to detach or sever. DISJOIN′ING, imp. DISJOINED′, pp. *-joynd′*. DISJOINT′, v. *-joynt′* [OF. *desjoinct,* parted]: to separate parts united by joints; to put out of joint; to break the natural order of a thing; to render incoherent; to fall in pieces: ADJ. in *OE.*, disjoined; fallen in pieces. DISJOINT′ING, imp. DISJOINT′ED, pp. unconnected; incoherent. DISJOINT′EDNESS, n. DISJOINT′LY, ad. *-lĭ.* DISJUNCT′, a. *-jŭngkt′* [L. *junctus,* joined]: separated. DISJUNC′TION, n. *-jŭngk′shŭn* [F. *disjonction*—from L. *disjunctĭōnem*]: separation; a parting; disunion. DISJUNC′TIVE, a. *-tĭv,* separating; in *gram.*, that unites sentences, but disjoins the sense, as the words, *but, though;* in *logic,* having its parts set in opposition: N. in *gram.*, a word which disjoins. DISJUNC′TIVELY, ad. *-lĭ.*—SYN. of ‘disjoin’: to disconnect; divide; part; sever; sunder; disunite; dissever.

DISJUNCTION: see under DISJOIN.

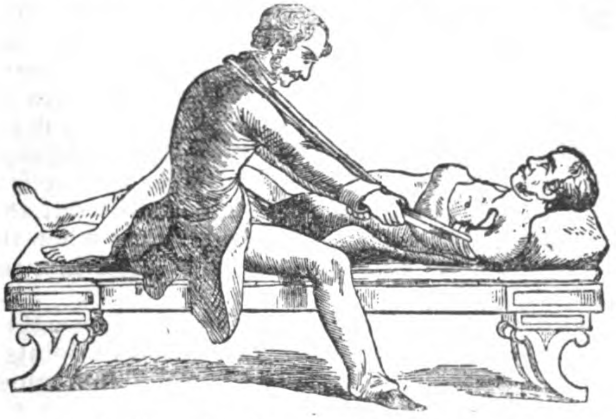
DISK, n. *dĭsk* [L. *discus,* a quoit (see DISH)]: any flattened or rounded body; the face of a heavenly body as it appears to us—as the sun, moon, etc.; a piece of stone or metal inclining to a round or oval figure. In *bot.*, a fleshy expansion on which the floral organs are inserted in some flowers; a part intervening in some flowers between the stamens and the pistil. It seems in most cases to represent an inner whorl of stamens variously modified. It is often a mere ring; sometimes it exhibits a whorl of scales or of rudimentary stamens, or even of petal-like appendages; sometimes it rises into a sort of cup around the pistil; sometimes, as in the rose, it assumes the form of a waxy lining of the tube of the calyx. It is often glandular, and secretes a honey-like fluid. It is one of the parts included under the vague comprehensive term *nectary* by the older botanists. *Disk* is also the receptacle of certain fungi, also the hymenium of others. DIS′COUS, a. *-kŭs,* broad; flat; wide. DISCIFORM, a. *dĭs′ĭ-fawrm* [L. *forma,* a shape]: in the form of a disk or flattened sphere; also DISCOID, a. *dĭs′-koyd* [Gr. *eidos,* form]: DISCOID PITH, in *bot.*, pith which forms disks with cavities between, as in the walnut.

DISLIKE, n. *dĭs-līk′* [L. *dis,* not, and *like*]: displeasure; aversion; a slight degree of hatred; antipathy; disrelish or distaste: V. to regard with displeasure or aversion; to regard with slight disgust; to disrelish. DISLI′KING, imp. DISLIKED, pp. *dĭs-līkt′*.—SYN. of ‘dislike, n.’: antipathy; repugnance; displeasure; disrelish; disapprobation; disinclination; disgust; disagreement; hate.

DISLIMB, v. *dĭs lĭm′* [L. *dis,* asunder, and *limb*]: to tear limb from limb.

DISLOCATE, v. *dĭs'lŏ-kāt* [L. *dislocătus*, removed from its place—from *dis*, asunder; *locătus*, put or laid—from *locus*, a place]: to put out of joint; to move a bone from its socket or cavity. DIS'LOCATING, imp. DIS'LOCATED, pp. put out of joint. DIS'LOCA'TION, n. *-kā'shŭn* [F.—L.]: state of being put out of joint; the act of forcing a bone out of its socket, particularly as the result of accident; in *geol.*, displacement of stratified rocks from their original or horizontal position.

DISLOCA'TION: term in surgery, denoting the displacement of one bone from another with which it forms a joint (*put out of joint* being the popular expression). D. is generally the result of sudden accident, but may be the result of disease, or may be congenital. The displacement may be *partial* or *complete;* and surgeons classify their cases into *simple* dislocations, when the skin remains unbroken; and compound, when there is a wound by which the external air may communicate with the joint. Occasionally, in addition to the D., there are fractures of the bones, or lacerations of important blood-vessels in the neighborhood; it is then termed a complicated dislocation. D. is a rare accident in infancy and old age, because in the former the joint ends of the bones are very flexible, and yield to violence; while the aged skeleton is so rigid that the brittle bones fracture under force that would drive younger and firmer ones out of their sockets. Dislocations are most frequent between the ages of 30 and 60. Persons with weak muscles, and lax, long ligaments, or those in whom the latter have been softened by inflammation of the joint, are predisposed to dislocation. The joints most frequently displaced are the shoulder and the elbow.

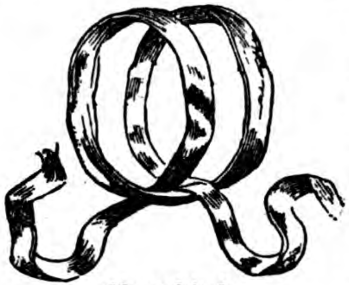


Reduction of Dislocation of Shoulder-joint.

General symptoms of a dislocation.—After a blow, fall, or violent muscular exertion, a limb is found to be immovable at the injured joint, there is great pain, and the shape of the part is changed; but soon swelling ensues, and every distinctive mark about it is obscured. If left alone, or merely treated as an inflamed joint, the swelling gradually subsides; but the immobility continues, the limb is crippled for months or years, when at last nature forms a new socket for the end of the bone, and some amount of useful motion is restored. The proper shape of the part is never restored, but remains an eyesore to the patient, and a disgrace to the surgeon.

The general treatment of dislocations consists in their *reduction*, or pulling the displaced bone back into its place. Its return is opposed by the muscles attached to it, which are stimulated to contraction by the pain of the operation, which, requires, of course, a good deal of force to be employed. It is desirable to remove this spasm of the muscles, which is the great obstacle to the reduction of a D.; and in former days, bleeding from the arm, emetics, the warm bath, etc., were generally used; now chloroform or ether attains the same ends, and renders the treatment much more simple and humane than before the introduction of anæsthetics.

When the surgeon is about to reduce a dislocation requiring any degree of force, he fastens the part of the limb above the displaced bone or the trunk, so as to afford him *counter*-extension; he then pulls on the limb either with his hands, or with a bandage or handkerchief attached to it. The best way of fastening this is to roll a bandage, wetted, to prevent slipping, round the limb, and then taking the thing with which he wishes to extend in both hands, he casts it into two loops, forming what is called a *clove-hitch*, and then slips the double noose up the limb till it rests on the wet bandage previously applied. In old standing cases, the hands grow weary before the extension has been kept up sufficiently long, so it is well to adapt pulleys to draw upon the clove-hitch, as with them the traction can be regulated as the surgeon desires. Sudden, forcible pulling is useless and hurtful, the object being merely to tire out the muscles which resist the attempts at reduction; when they are exhausted, the bone will generally slip back into its place with an audible snap.



Clove-hitch.

A class of shrewd individuals, called *'bone-setters,'* frequently derive profit from some conditions of joints which resemble dislocations. Chronic rheumatic inflammation is occasionally known to fix itself by an accident on some particular joint, especially the shoulder or hip, and may so change the surfaces of the bone-ends that they are spontaneously dislocated; the empiric, naturally antagonistic to the regular practioner, tells the patient that when he met with the accident the D. occurred, but that his physician overlooked it. Again, many persons who have injured their joints do not submit to having them moved about, after the first inflammation has subsided. The bone-setter gives a forcible bend to the limb, which breaks up the adhesions; and because he has done roughly what the physician would have done equally well gently, the patient praises him, while he blames the one who guided his joint in safety through the first effects of the accident.

Whenever a D. occurs, the nearest medical man should be summoned, even should the mere displacement be rectified at once, because no such accident can occur without some tearing of the soft parts, and it will depend on the after-treatment whether the joint will ever become useful again or not. It must also be remembered, that the sooner a D. is reduced, the easier is the reduction. Since the introduction of anæsthesia, however, and the subcutaneous division of tissues, many ancient cases may be improved, and many crippled limbs restored to usefulness.

DISLOCATION, or **Fault**, in Geology: a kind of displacement common among stratified rocks. The agency that raised these rocks above the waters of the sea, produced in the elevation numerous rents. In their simplest form, the rents are mere cracks, the parts, though separated, remaining contiguous; sometimes a greater or less fissure intervenes between the disunited portions, and this is filled with materials pressed in from above, or with igneous rocks intruded from below. The beds, however, are not always found at the same level—a displacement as well as a severance often takes place, so that the beds on one side of the fissure or crack are many feet, or many hundreds of feet, above or below the beds on the other side with which they were once continuous. One of the best known faults is the 'Ninety Fathom Dike' in the Newcastle coal-field, England. The same beds are 90 fathoms lower on the n. than on the s. side. The fissure varies in width from a few ft. in some places to more than 20 yards in others: it is filled with sandstone. In the Edinburgh coal-field, the greatest fault is known as the 'Sheriffhall Slip.' It has produced a dislocation of the strata to the extent of 400 or 500 ft., so that the coal which is worked on the s. side of the slip, near the surface, is on the n. side 500 ft. below it. Mr. Milne Home enumerates 120 faults in the Mid-Lothian and East-Lothian coal-fields. He has himself examined 78 of these, and has found that 35 dip to the s., and 43 to the n; and that while the sum of the down-throws by the faults dipping to the s. is 385 fathoms,

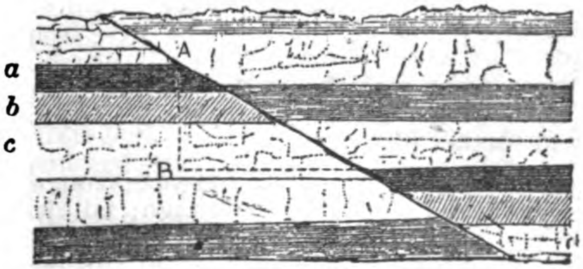


Diagram of Dislocated Strata.

those dipping to the n. have depressed the strata 754 fathoms.

Faults in coal-fields are well known, because of their serious interference with the progress of the miner. But though they often cause considerable labor and expense in searching for the continuation of a valuable seam of coal, they have corresponding advantages, since they disclose on the surface the value of the buried minerals, and when filled with solid materials, they form embankments which confine water, and thus save expense in draining the mine.

The amount of dislocation is the measure of a line drawn from one part of the bed, at right angles to its plane, to a line produced from the other separated part of the bed representing its plane. Thus, in the diagram, AB shows the extent of the down-throw, say 10 ft. Although no notion can be formed, in meeting with a fault, of the extent of dislocation, yet the direction in which the lost strata are to be sought can be certainly determined, for it has been found to be an invariable law, that the strata are lowest on the overlapping side of the slip, so that in the diagram the beds *a, b, c* are 10 ft. deeper in the overlying side than the same beds on the other. Faults have local names from the miners, all of which have been used by geologists. They are called hitches, dikes, troubles, slips, slides, heaves and throws.

DISLODGE, v. *dĭs-lŏj′* [OF. *desloger*—from *des* for L. *dis*, apart; *loger*, to lodge]: to remove or drive from a lodgment or place of rest; to drive from any place of rest or retirement, or from a station. Dislodg′ing, imp. Dislodged′, pp. *-lŏjd′*. Dislodg′ment, n. act of dislodging or removing to another place.

DISLOYAL, a. *dĭs-loy′ăl* [OF. *desloyal*—from *des* for L. *dis*, apart, and *loyal*]: false to a sovereign; faithless; false; treacherous. Disloy′ally, ad. *-lĭ*. Disloy′alty, n. *-tĭ*, want of fidelity to a sovereign.—Syn. of ‘disloyal’: disaffected; perfidious; inconstant; dishonest; treacherous; disobedient; unfaithful.

DISMAL, a. *dĭz′măl* [Swiss, *dusem*, dark, down-hearted: Bav. *dusam*, dull: prov. Dan. *dussem*, slumber]: dreary; dark; gloomy; sorrowful; frightful. Dis′mally, ad. *-lĭ*. Dis′malness, n. the state of being dismal; gloominess. Dismal days, in *OE.*, unlucky days. *Note.*—It is possible that the OE. *in the dismal* was equivalent to *in the tithing time*, referring to the cruel extortions practiced by the feudal lords in exacting the tithes from their vassals: OF. *disme;* mid. L. *decĭma*, a tithe—from L. *decem*, ten: mid. L. *decĭmālis*, pertaining to tithes. See Skeat.—Syn. of ‘dismal’: dull; sorrowful; melancholy; sad; lonesome; doleful; dire; horrid; direful; lamentable; horrible; dolorous; calamitous; unhappy; unfortunate; foreboding; cheerless; uncomfortable.

DISMAL SWAMP, *dĭz′mal swŏmp:* chiefly in Virginia, but partly in N. Carolina; 40 m. long from n. to s., 25 m. wide. In the centre is Lake Drummond, covering about six sq. miles. Elsewhere the surface is divided between tangled reeds and heavy timber, with a thick under growth. This extensive morass has been, at a vast cost, traversed by canals, and two lines of railway pass through the outskirts of the Virginian part of the swamp.

DISMANTLE, v. *dĭs măn'tl* [OF. *desmanteller*, to take a man's cloak from his back—from *des* for L. *dis*, asunder: *manteler*, to cover with a cloak—*lit.*, to throw off a mantle or dress]: to strip or divest, as a house of furniture, or a castle of its defenses. DISMANT'LING, imp. *-mănt'lĭng:* N. the act of stripping or divesting, as a town or fort of its means of defense; operation which a ship undergoes when to be laid up in ordinary, or placed out of service; she is unrigged; the yards and most of the ropes are removed; and the upper masts taken down. DISMAN'TLED, pp. *-măn'tld.* —SYN. of 'dismantle': to demolish; raze; divest; strip; disable.

DIS'MAS, SAINT: name which Rom. Cath. tradition has attached to the 'penitent thief.' He is represented with a cross beside him.

DISMASK, v. *dĭs-măsk'* [OF. *desmasquer*—from *des* for L. *dis*, asunder; *masquer*, to mask]: to strip or divest of a mask or covering

DISMAST, v. *dĭs-măst'* [L. *dis*, asunder, and *mast*]: to break down or carry away the masts from a ship. DISMAST'ING, imp. DISMAST'ED, pp.

DISMAY, n. *dĭs-mā'* [Sp. *desmayo*, a fainting fit, dismay: Norm. F. *s'esmayer*, to be sad; *esmay*, sorrow, gloom: It. *smagare*, to dispirit: OE *demaye*]: a loss of courage or firmness; a sinking of the spirits; depression; fear, with discouragement and confusion; terror: V. to terrify and confuse; to dishearten; to discourage or depress. DISMAY'ING, imp. DISMAYED', pp. *-mād'.*—SYN. of 'dismay, v.'; to affright; appall; daunt; discourage; dispirit; deject; fright; frighten; disquiet.

DISME, or **DIME**, n. *dēm* [F. *dîme;* OF. *disme*—from L. *decĭma*, a tenth part]: tenth; a tenth part; tithe.

DISMEMBER, v. *dĭs-mĕm'bėr* [OF. *desmembrer*—from *des* for L. *dis*, asunder; *membre*, a limb (see MEMBER)]: to separate limb from limb; to tear or cut in pieces; to maim; to divide; to sever. DISMEM'BERING, imp. DISMEM'BERED, pp. *-bėrd.* DISMEM'BERMENT, n. the act of severing a limb or limbs from the body; division.—SYN. of 'dismember': to disjoint; dilacerate; dislocate; mutilate; separate; tear.

DISMISS, v. *dĭs-mĭs'* [L. *dis*, asunder; *missus*, sent]: to send away; to permit to depart, used of a person in high authority to an inferior—as, the king dismisses the ambassador; to discharge from employment or office. DISMIS'SING, imp. DISMISSED', pp. *-mĭst'.* DISMIS'SAL, n. *-mĭs'săl*, or DISMIS'SION, n. *mĭsh'ŭn*, the act of discharging or sending away; removal from office, etc.

DISMORTGAGE, v. *dĭs-mŏr'gāj* [L. *dis*, asunder, and *mortgage*]: to redeem from mortgage.

DISMOUNT, v. *dĭs-mownt'* [OF. *desmonter*—from *des* for L. *dis*, away; *monter*, to mount, to ascend (see Mount)]: to alight or get off from a horse; to descend or throw down from an elevation; to throw from a horse; to unhorse; to remove cannon, etc., from their carriages. Dismount'ing, imp. Dismount'ed, pp.

DISNATURED, a. *dĭs-nā'tūrd* [L. *dis*, not, and *natured*]: in *OE.*, devoid of natural affection; unnatural.

DISOBEDIENT, a. *dĭs'ō bē'dĭ ĕnt* [L. *dis*, not, and *obedient* (see Disobey)]: refusing to obey; not doing what is commanded; doing what is prohibited; refractory. Dis'obe'diently, ad. *-lĭ*. Dis'obe'dience, n. *-dĭ-ĕns*, neglect or refusal to obey; violation of a prohibition or command.

DISOBEY, v. *dĭs'ō-bā'* [F. *désobéir*—from *des* for L. *dis*, asunder; *obéir*, to obey (see Obey)]: not to obey; to neglect to do what is commanded; to do what is prohibited; to violate the order or injunction of a superior. Dis'obey'ing, imp. Dis'obeyed', pp. *-bād'*.

DISOBLIGE, v. *dĭs'ō-blīj'* [L. *dis*, the opposite of, and *oblige:* F. *désobliger*]: to offend by an act of unkindness or incivility; to injure in a slight degree; to contravene the will of another. Dis'obli'ging, imp.: Adj. not disposed to gratify the wishes of another, or to please; unkind. Dis'obliged', pp. *-blījd'*. Dis'oblige'ment, n. *-mĕnt*. Dis'obli'gingly, ad. *-lĭ*.

DISORB, v. *dĭs-ŏrb'* [L. *dis*, asunder, and *orbit*]: to throw or fly out of its proper orbit. Disorb'ing, imp. Disorbed, pp. *dĭs-ŏrbd'*.

DISORDER, n. *dĭs-ŏr'dėr* [OF. *desordre*—from *des* for L. *dis*, asunder; *ordre*, order (see Order)]: want of order; confusion; irregularity; a breach of the peace or laws; a slight disease either of body or mind: V. to throw into confusion; to disarrange; to produce sickness; to disturb the mind; to ruffle; to disturb the regular and natural functions of either body or mind. Disor'dering, imp. Disor'dered, pp. *-dėrd*, put out of order; sick. Disor'derly, a. *-lĭ*, without proper order; confused; irregular; unruly; lawless: Ad. confusedly; irregularly. Disor'derliness, n. *-lĭ-nĕs*.—Syn. of 'disorder, n.': disarrangement; bustle; disturbance; tumult; disease; illness; sickness; malady; distemper; indisposition; disarray;—of 'disorder, v.': to derange; confuse; discompose;—of 'disorderly'· unmethodical; confused; inordinate; unruly; intemperate; vicious; loose.

DISOR'DERLY HOUSE: see Nuisance.

DISORGANIZE, v. *dĭs-ŏr'găn-īz'* [L. *dis*, asunder, and *organize:* F. *désorganiser*]: to throw a regular system or union of parts into confusion, as a government, a church, or a society; to destroy order or system. Disor'ganiza'tion, n. *-ī-zā'shŭn*, the act of destroying a structure or connected system; state of being disorganized.

DISOWN, v. *dĭs-ōn'* [L. *dis*, not, and *own*]: to refuse to acknowledge as belonging to one's self; to deny; to renounce; not to allow. Disown'ing, imp. Disowned', pp.

-ōnd′.—SYN. of 'disown'· to disclaim; disavow; disallow; repudiate.

DISPARAGE, v. *dĭs-păr′āj* [Norm. F. *déparager*, to marry a daughter to one of inferior degree—from L. *dispărārĕ*, to part, to separate—from L. *dis*, not; *par*, equal: F. *parage*, equality in birth or in blood, descent—*lit.*, to match one with another of inferior birth and condition]: to undervalue; to injure by comparison with something inferior; to speak slightingly of one; to dishonor or debase by words or actions. DISPAR′AGING, imp. DISPAR′AGED, pp. *-ājd.* DISPAR′AGEMENT, n. injury by comparison with something inferior; a lessening of value or excellence; reproach; detraction; dishonor. DISPAR′AGER, n. *-ā-jėr*, one who. DISPAR′AGINGLY, ad. *-lĭ.* *Note.*—Skeat cites OF. *desparager*, to offer to a man unworthy conditions, to disparage—from *des* for L. *dis*, asunder; *parage*, lineage, rank—from mid. L. *paratĭcum*, rank.—SYN. of 'disparage': to depreciate; decry; vilify; reproach; degrade; detract from; dishonor; lower; debase;—of 'disparagement': indignity; derogation; detraction; disgrace.

DISPARATE, a. *dĭs′păr-āt* [F. *disparate*, incongruous—from mid. L. *dispărātus*, separated, incongruous—from L. *dis*, not; *par*, equal]: unlike; dissimilar. DISPARATES, n. plu. *dĭs′păr-āts*, things so unequal or unlike that they cannot be compared.

DISPARITY, n. *dĭs-păr′ĭ-tĭ* [F. *disparité*, incongruity—from L. *dis*, not; *par*, equal]: marked difference in degree, age, rank, condition, or excellence; unlikeness; inequality.—SYN.: disproportion; dissimilitude.

DISPARK, v. *dĭs-pârk′* [L. *dis*, not, and *park*]: in *OE.*, to render uninclosed.

DISPART, v. *dĭs-pârt′* [L. *dis*, asunder, and *part:* F. *départir*, to share, to divide]: to separate; to part asunder; to divide—used in poetry. N. *dĭs′pârt*, in *gunnery*, a mark set upon the muzzle of a gun, to aid the gunner in obtaining a line of sight truly parallel with the axis of the bore. The dispart, in strictness, is not the mark itself, but a distance or quantity denoted by the mark; and 'to dispart' a gun is to determine this distance. It depends mainly on the relation between the diameter of the breech and that of the muzzle; a general rule is, half the difference between the greatest circumference of a gun at the breech, and that of the mouth. DISPART′ING, imp. DISPART′ED, pp.

DISPASSIONATE, a. *dĭs-păsh′ŭn-āt* [L. *dis*, asunder, the opposite of, and *passionate*]: free from passion or personal feeling: cool or collected; not proceeding from temper or bias; impartial. DISPAS′SIONATELY, ad. *-lĭ.*—SYN. of 'dispassionate': unimpassioned; calm; serene; composed; unruffled; temperate; moderate; unbiassed.

DISPATCH, v. *dĭs-păch′* [OF. *despescher;* F. *dépécher*, to send away quickly, to hasten—from OF. *des* for L. *dis*, apart; *pescher*, to hinder—from L. *pedĭca*, a fetter: comp. OF. *empescher*, to place hindrances in the way: Sp. *despachar*, to expedite—*lit.*, to remove a hindrance]: to send away quickly; to dispose of speedily; to send on special business implying haste; to put to death; to execute speedily; to finish: N. speedy performance; haste; an express message. DISPATCH'ES, n. plu. *-ĕz,* written documents or messages regarding some affair of state sent to or from a country; naval or military reports sent to headquarters. DISPATCH'ING, imp. DISPATCHED', pp. *-spăcht'.* DISPATCH'ER, n. *-ėr*, one who or that which dispatches. DISPATCH'FUL, a. *-fûl,* bent on haste.—SYN. of 'dispatch, v.': to hasten; accelerate; expedite; speed; perform; finish; conclude; kill; slay; dispose of; execute;—of 'dispatch, n.': hurry; haste; celerity; promptness; speed; expedition; diligence; a message.

DISPATHY, n. *dĭs'pa-thĭ* [pref. *dis*, and Gr. *pathos,* suffering, feeling]: a want of passion; an absence of sympathy; a point of difference.

DISPEL, v. *dĭs-pĕl'* [L. *dispellĕrĕ,* to drive asunder or scatter—from *dis*, asunder; *pello,* I drive]: to scatter by driving or force; to dissipate; to disperse. DISPEL'LING, imp. DISPELLED', pp. *-pĕld'.*

DISPENSA'TION, in Ecclesiastical Affairs: license granted by the pope for that which is ordinarily prohibited. The nature and limits of the dispensing power have been the subject of much discussion not only in controversy with Protestants, but among Roman Catholics themselves. It is held by the extreme advocates of papal power, that the pope may dispense in any divine law, except the articles of faith; by others, that his dispensing power does not extend to express precepts of the New Testament; some say that his dispensation is valid only when it proceeds upon just cause; some, that it is not properly a relaxation of the law's obligation, but merely a declaration that in the particular case the law is not applicable. The usage of the Church of Rome, however, agrees with the opinions of her theologians in making the pope supreme in releasing from oaths and vows; and a decree of the Council of Trent anathematizes all who deny the power of the church to grant dispensations for marriages within the prohibited degrees of the Mosaic law; while the multiplied prohibited degrees of the canon law give much occasion for the more frequent exercise of the same power.—Nothing really of the nature of a formal dispensation is known in any Prot. church. The only kind of dispensations now in use in the Church of England, are those granted by a bishop to a clergyman, to enable him to hold more benefices than one, or to absent himself from his parish. Formerly, the pope's dispensations in England, as elsewhere, prevailed against the law of the land, not in ecclesiastical matters only, but in all that large department of civil affairs which, by an interested fiction, was brought within the scope of ecclesiastical government. This abuse was swept away at the Reformation, by 25 Henry VIII. c. 21. The power of the pope was then conferred on the abp. of Canterbury, so far as it was not contrary to the law of God. The granting of special licenses of marriage, and the like, is the only form in which it is ever exercised.

In former times, the crown claimed a dispensing power in civil, similar to that which belonged to the pope in ecclesiastical matters. The power was grossly abused by James II., and was consequently expressly abolished by the Bill of Rights. The privilege of granting pardons in capital cases is the only form in which the dispensing power of the English crown still exists. In other countries a similar dispensing power vests in the chief executive.

DISPENSE, v. *dĭs-pĕns′* [F. *dispenser*, to distribute—from L. *dispensārĕ*, to weigh out, to distribute, intensive from *dispen′dĕrĕ* for *dispan′dĕrĕ*—from L. *dis*, asunder; *pandĕrĕ*, to spread—*lit.*, to give permission not to do something]: to deal out in parts or portions; to distribute; to administer, as laws; to make up for immediate use, as medicines: N. in *OE.*, exemption. TO DISPENSE WITH, to give leave not to do; to do without; to permit the suspension or omission of something usually in force. DISPEN′SING, imp: ADJ. that gives exemption from; that grants dispensation. DISPENSED′, pp. *-pĕnst′*. DISPEN′SER, n. that which, or one who. DISPEN′SABLE, a. *-să-bl*, that may be dispensed with. DISPEN′SABLENESS, n. DISPEN′SARY, n. *-ser-ĭ*, a place where medicines are given to the poor, generally gratis, with medical advice; the place where medicines are prepared. DIS′PENSA′TION, n. *-sā′shŭn* [F.—L.]: exemption from any rule, law, or canon; the liberty granted to a particular person to do what is forbidden; divine government; God's dealings with His creatures; a particular system of principles and rules, as the *Mosaic dispensation;* in *OE.*, a distribution. DISPEN′SATIVE, a. *-să-tĭv*, granting dispensation. DISPEN′SATIVELY, ad. *-lĭ*. DISPEN′SATORY, n. *-tėr-ĭ*, a book containing the history and composition of medicinal substances, with information for their preparation as medicines: ADJ. having the power of granting dispensation.

DISPEOPLE, v. *dĭs-pē′pl* [OF. *despeupler*, to dispeople —from *des* for L. *dis*, asunder; *peuple*. people (see PEOPLE)]: to depopulate; to empty of inhabitants.

DISPERMOUS, a. *dī-spėr′mŭs* [Gr. *dis*, twice; *sperma*, seed]: in *bot.*, having two seeds.

DISPERSE, v. *dĭs-pėrs′* [F. *disperser*—from L. *dispersus*, scattered on all sides—from *dis*, asunder; *sparsus*, scattered]: to scatter on all sides; to cause to separate into different parts; to dispel, diffuse, or distribute; to be scattered; to separate. DISPER′SING, imp. DISPERSED′, pp. *-pėrst′*. DISPER′SER, n. one who. DISPER′SION, n. *-pėr′shŭn* [F.—L.]: the act of scattering; the state of being scattered; in *optics*, the separation of light into its different colored rays in passing through a prism. DISPER′SEDLY, ad. *-lĭ*. DISPER′SIVE, a. *-sĭv*, tending to separate or scatter. DISPER′SEDNESS, n. state of being dispersed or scattered.—SYN. of 'disperse': to scatter; spread; sprinkle; dissipate; disseminate; vanish.

DISPER′SION, in Optics: prismatic separation of light. Ordinary white light is heterogeneous in character, being composed of rays of different refrangibility, and the term dispersion used to denote the separation of these rays by refraction. Transparent media of various kinds possess different dispersive powers, or, in other words, different powers of widening the angle between the red and violet rays, when a ray of white light suffers refraction through a prism of given angle at a given angle of incidence. What is called the 'irrationality of dispersion,' consists in the fact, that when a spectrum is measured after Frauenhofer's manner, it is found that the distance between any of the same two fixed lines of the spectrum has not a constant ratio to the distance between the extreme fixed lines, where different media are used: see SPECTRUM. The word dispersion is used also sometimes to denote irregular reflection or the scattering of light on imperfectly polished surfaces: see CATOPTRICS. The amount of light not reflected according to the regular law varies with the nature of the reflecting surface. In the case of light incident at right angles upon a surface of common glass, one-thirteenth only is properly reflected. In perpendicular reflection at an ordinary silvered looking-glass, about one-third is lost by this sort of dispersion. A little less than one-third is lost in perpendicular reflection from highly polished speculum metal.

DISPIRIT, v. *dĭs-pĭr'ĭt* [L. *dis*, asunder, and *spirit*]: to discourage; to depress or dishearten. DISPIR'ITING, imp. DISPIR'ITED, pp. DISPIR'ITEDLY, ad. *-lĭ*. DISPIR'ITEDNESS, n. want of courage; depression of spirits.—SYN. of 'dispirit': to depress; damp; deject; cow; daunt; intimidate; terrify.

DISPITEOUS, a. *dĭs-pĭt'ĭ-ŭs* [L. *dis*, asunder, and *piteous*]: in *OE.*, wanting in pity; spiteful.

DISPLACE, v. *dĭs-plās'* [OF. *desplacer;* F. *déplacer*—from *des* for L. *dis*, asunder; *placer*, to place (see PLACE)]: to put out of the usual order or place; to remove from any state, condition, or office. DISPLA'CING, imp. DISPLACED', pp. *-plāst'*. DISPLACE'MENT, n. *-plās'mĕnt*, the act of removing from the usual state or condition. DISPLACE'ABLE, a. *-ă-bl*, that may be displaced.—SYN. of 'displace': to derange; disarrange; remove; discard; dismiss; discharge; depose; disorder; disturb.

DISPLANT, v. *dĭs-plănt'* [OF. *desplanter*—from *des*, for L. *dis; planter*, to plant (see PLANT)]: to pluck up or remove a plant; to root out; to remove; to drive out or remove, as the inhabitants of a place.

DISPLAY, v. *dĭs plā'* [OF. *desployer*, to exhibit, to show—from *des* for L. *dis*, asunder; *ployer*, to fold—from L. *plicārĕ*, to fold: It. *dispiegare*, to extend itself, to explain: comp. Gael. *spleadh*, ostentation, vainglory—*lit.*, to spread out for show]: to spread wide; to open; to expand; to show; to spread before the eyes or mind; to make manifest; to show ostentatiously: N. show; exhibition of anything to the view. DISPLAY'ING, imp. DISPLAYED', pp. *-plād'*. *Displayed*, in *heraldry*, means expanded; e.g., an eagle displayed is a 'spread eagle' (see EAGLE). DISPLAY'ER, n. one who.—SYN. of 'display, v.': to parade; exhibit; spread out; unfold; discover.

DISPLE, v. *dĭs'pl* [contraction of *discipline*, which see]:

in *OE.*, to impose penance; to discipline. **DISPLING**, imp. *dĭs′plĭng*. **DISPLED**, pp. *dĭs′pld*.

DISPLEASE, v. *dĭs-plēz′* [OF. *desplaisir*—from *des* for L. *dis*, asunder; *plaisir*, to please (see PLEASE)]: to offend; to make angry in a slight degree; to be disagreeable to; to raise aversion. **DISPLEA′SING**, imp.: ADJ. causing displeasure. **DISPLEASED′**, pp. *-plēzd′*. **DISPLEAS′URE**, n. *-plĕzh′ûr*, some degree of irritation or uneasiness of the mind caused by something opposed to our desires or commands, or contrary to our sense of right; a slight degree of anger; offense; dislike; state of disfavor.—SYN. of 'displease': to vex; mortify; disgust; anger; chafe; affront; provoke; dissatisfy;—of 'displeasure': disapprobation; distaste; dislike; anger; offense; indignation; annoyance.

DISPLODE, v. *dĭs-plōd′* [L. *displōdĕrĕ*, to spread out, to explode—from *dis*, asunder; *plaudĕrĕ*, to clap, to strike]: in *OE.*, to expand with a loud noise; to discharge, as artillery. **DISPLOSION**, n. *dĭs-plō′zhŭn* [L. *plōsus*, beaten]: a sudden expansion with loud noise.

DISPONDEE, n. *dī′spŏn′dē* [L. *dispondeus*—from Gr. *dis*, twice, and *spondeios*, a spondee]: in *prosody*, a double spondee; a foot consisting of four long syllables.

DISPONE, v. *dĭs-pōn′* [L. *disponĕrĕ*, to arrange, to dispose—from *dis*, *pōnō*, I place]: in *Scots law*, to convey or make over to another in a legal form. **DISPO′NING**, imp. **DISPONED′**, pp. *-pōnd′*. **DISPONEE**, n. *dĭs′pō-nē′*, one to whom anything is made over in a legal form. **DISPO′NER**, n. *-nėr*, a person who legally transfers property from himself to another.

DISPORT, v. *dĭs-pōrt′* [OF. *desporter*, to amuse one's self —from *des* for L. *dis*, intensive; F. *porter*, L. *portārĕ*, to carry (see SPORT)]: to sport; to play; to divert or amuse one's self; to move lightly and without restraint: N. play; diversion; amusement. **DISPORT′ING**, imp. **DISPORT′ED**, pp.

DISPOSE, v. *dĭs-pōz′* [F. *disposer*, to set in order—from L. *dis*, asunder; *posĭtus*, placed]: to set; to arrange; to place in order; to regulate; to give or apply to a particular purpose; to incline, as the mind; in *OE.*, to conduct; to make terms: N. in *OE.*, disposal; disposition; behavior; inclination. **DISPO′SING**, imp. **DISPOSED′**, pp. *-pōzd′*. **DISPO′SEDNESS**, n. *-pō′zĕd-nĕs*, inclination. **DISPO′SER**, n. *-zėr*, one who. **DISPOSAL**, n. *dĭs-pō′zăl*, a setting or arranging; order; arrangement of things; power or right of ordering or bestowing. **DISPO′SABLE**, a. *-ză-bl*, free to be used or employed as occasion may require. **DISPOSITION**, n. *dĭs′-pō-zĭsh′ŭn* [F.—L.]: act of disposing; state of being disposed; order or manner of arrangement; manner in which things or parts are placed or arranged; order; method; arrangement; temper; natural constitution of the mind; inclination. *Disposition*, in *art*, has reference to the arrangement of the parts, while Composition refers to the effect of the whole: *Disposition*, in *music*, term in organ-building adopted from the German, denoting the arrangement and combination of the stops on the different rows of keys and pedals, with the pitch of each stop, or length of the lowest CC pipe: *Disposition*, in *Scottish law*, deed of conveyance, applicable either to heritable or movable property, most frequently used for the purpose of transferring the former from the seller to the buyer; used also to settle a whole succession, both heritable and movable—known as a disposition and settlement: see INFEFTMENT: TRUST: HERITABLE SECURITIES: MORTGAGE. DIS'POSI'TIONAL, a. *-ŭn-ăl*, pertaining to disposition. TO DISPOSE OF, to part with; to sell; to use or employ; to transfer or place by right.—SYN. of 'dispose': to adjust; order; distribute; fit; adapt; give, bestow;—of 'disposal': management; dispensation; disposition; government; conduct; control; regulation; adjustment;—of 'disposition': character; adjustment; disposal; regulation; distribution; adaptation; propensity; tendency; aptitude.

DISPOSSESS, v. *dĭs'pŏs-zĕs'* [L. *dis*, asunder, and *possess*]: to deprive of; to put out of possession by any means. DIS'POSSES'SING, imp. DIS'POSSESSED', pp. *-zĕst'*. DIS'-POSSES'SION, n. *-zĕsh'ŭn*, act of putting out of possession.

DISPRAISE, v. *dĭs-prāz'* [OF. *despreisier* and *desprisier* —from *des* for L. *dis*, asunder; *preisier* and *prisier*, to praise (see PRAISE)]: to mention with some degree of reproach or disapproval; to censure: N. blame; censure; dishonor. DIS-PRAIS'ING, imp. DISPRAISED', pp. *-prāzd'*. DISPRAIS'ER, n. one who. DISPRAIS'INGLY, ad. *-lĭ*.

DISPREAD, v. *dĭs-prĕd'* [L. *dis*, asunder, and *spread*]: to spread in different ways. DISPREAD'EN, v. *-prĕd'ĕn*, in Spenser for *dispread*.

DISPROOF, n. *dĭs-prôf'* [L. *dis*, the opposite of, and *proof*]: a proving to be false or erroneous; confutation.

DISPROPORTION, n. *dĭs'prō-pōr'shŭn* [F. *disproportion* —from L. *dis*, the opposite of, and *proportion*]: a want of due relation of parts of one thing to another, or between the parts of a thing; want of symmetry; want of proper quantity; unsuitableness of things or parts to each other; inequality; disparity: V. to unite things unsuitable; to mismatch. DIS'-PROPOR'TIONABLE, a. *-ă-bl*, not in proportion; unsuitable in form, size, or quantity to something else. DIS'PROPOR'TION-ABLENESS, n. *-bl-nĕs*, the want of symmetry; the state of being unsuitable. DIS'PROPOR'TIONABLY, ad. *-ă-blĭ*. DIS'-PROPOR'TIONAL, a. *-ăl*, not having a due relation or proportion to something else. DIS'PROPOR'TIONALLY, ad. *-ăl-lĭ*. DIS'PROPOR'TIONATE, a. *-āt*, not proportioned; unsuitable to something else in bulk, form, or value. DIS'PROPOR'-TIONATELY, ad. *-lĭ*. DIS'PROPOR'TIONATENESS, n. *-nĕs*, the state of being disproportionate; inadequacy.

DISPROVE, v. *dĭs-prôv'* [L. *dis*, the opposite of, and *prove*]: to prove to be false or erroneous; to confute. DIS-PRO'VING, imp. DISPROVED', pp. *-prôvd'*. DISPRO'VABLE, a. *-vă-bl*, capable of being disproved. DISPRO'VAL, n. *-văl*, act of disproving. DISPRO'VER, n. one who.

DISPURSE, v. *dĭs-pėrs'* [L. *dis*, asunder, and *purse*]: in *OE.*, to pay out money; to disburse.

DISPUTE, v. *dĭs-pūt'* [F. *disputer*, to dispute; *dispute*, a dispute or quarrel—from L. *disputārĕ*, to cast up a sum, to examine and discuss a subject—from *dis*, asunder; *puto*, I think: It. *disputare—lit.*, to examine and discuss a subject, and so make it clear]: to debate; to contend for by words or actions; to reason or argue in opposition to; to altercate; to doubt or question: N. a debate; a contest by words; a controversy; an altercation. DISPU'TING, imp DISPU'TED, pp. DISPUTABLE, a. *dĭs'pū-tă-bl* [F.—L.]: liable to be called in question or controverted. DIS'PUTABLY, ad. *-blĭ*. DIS'PUTABLENESS, n. *-bl-nĕs*. DISPU'TER, n. one who. DISPUTANT, n. *dĭs'pū-tănt* [F.]: one who argues or disputes. DIS'PUTA'TION, n. *-tā'shŭn*, a controversy; a contest in words. DIS'PUTA'TIOUS, a. *-tā'shŭs*, inclined to dispute; prone to controversy. DISPU'TATIVE, a. *-tă-tĭv*, disposed to argue or dispute. BEYOND DISPUTE, that cannot be gainsaid or controverted.—SYN. of 'dispute, v.': to argue; impugn; question; doubt; contest; controvert; quarrel; disagree; differ.

DISQUALIFY, v. *dĭs-kwŏl'ĭ-fī* [L. *dis*, asunder, and *qualify*]: to render unfit; to deprive of natural power, properties, or qualities necessary for any work or position; to reject, as in an examination. DISQUAL'IFYING, imp. DISQUAL'IFIED, pp. *-fīd*, rendered unfit. DISQUAL'IFICA'TION, n. *-fĭ-kā'shŭn*, act of disqualifying; that which renders unfit or incapable of further enjoyment or possession.

DISQUANTITY, v. *dĭs-kwŏn'tĭ-tĭ* [L. *dis*, asunder, and *quantity*]: in *OE.*, to diminish; to lessen.

DISQUIET, v. *dĭs-kwī'ĕt* [L. *dis*, not, and *quiet*]: to disturb; to make uneasy or restless in mind or body: N. uneasiness; restlessness; anxiety. DISQUI'ETNESS, n., or DISQUI'ETUDE, n. *-ĕ-tūd*, uneasiness; want of peace or tranquillity. DISQUI'ETING, imp. DISQUI'ETED, pp. DISQUI'ETER, n. one who. DISQUI'ETLY, ad. *-ĕt-lĭ*.

DISQUISITION, n. *dĭs'kwĭ-zĭsh'ŭn* [F. *disquisition*—from L. *disquisitiōnem*, a judicial inquiry—from *dis*, asunder; *quæsītus*, sought: It. *disquisizione*]: a formal inquiry into any subject by argument or discussion; a treatise written in order to elucidate the truth regarding any subject. DIS'QUISI'TIONAL, a. pertaining to.

DISRAELI, *dĭz-rā'le*, or *dĭz-rā'ĕl-e*, **Benjamin**, Earl of **Beaconsfield**: author and statesman: 1804, Dec. 21—1881, Apr. 19; b. at 6 John Street, Bedford Row, London; and a week later, circumcised after the Hebrew rite. He was educated partly at a private school, kept at Walthamstow by a Unitarian minister; received baptism in the Anglican Church 1817; and was articled to a solicitor 1821, in order to qualify him for a government office. He was admitted a student at Lincoln's Inn 1824, and kept nine terms, but had his name removed from the books 1831. Abandoning the study of law, he developed an ambition to shine in political and fashionable life. In 1826, he published his novel *Vivian Grey*, succeeded at intervals by other brilliant works of fiction, including *The Young Duke*, *Contarini Fleming*, *The Wondrous Tale of Alroy*, and *Henrietta Temple*. He wrote also *The Rise of Iskander*, *A Vindication of the British Constitution*, and *The Revolutionary Epic* After visiting Italy, Greece, Turkey, and Syria, he returned to England, to find the country involved in the reform bill agitation. His sympathies appear to have then inclined to radicalism in politics; and having obtained recommendations from Mr. Hume and Mr. O'Connell, he presented himself 1832 to the electors of Wycombe, but was defeated. At the general election 1835, he had no better success. In April in the same year, he contested Taunton on conservative principles, again without success. In 1837, his desire for a political career being unabated, he contested Maidstone in the conservative interest with Mr. Wyndham Lewis. He was elected, and at the age of 32 took his seat in the house of commons. His maiden speech, which was in a high-flown style, and delivered with extravagant gestures, excited the laughter of the house of commons. He was so much disconcerted, that he stopped short abruptly, but not without uttering the remarkable prophecy: 'I shall sit down now, but the time will come when you will hear me ' In 1838, Mr. W. Lewis died, and in the following year D. married the widow of his late colleague. He then carefully studied the style of successful parliamentary orators, making few speeches. It was not till 1840 that he began to attract notice, and not long afterward he gained the ear of the house as the leader of the Young England party. After entering parliament, D. wrote several novels—*Coningsby* (1844), *Sybil* (1845), *Tancred* (1847), in which the principles of young England are most ingeniously blended with theories about the intellectual supremacy of the Jews, inaccurate scientific notions, and misconceptions of English social life. At the general election, 1841, he obtained a seat for Shrewsbury. He then became the organ of the dissatisfaction with which the landed aristocracy and country gentry regarded Sir Robert Peel's relaxations of the system of protection to native industry. His brilliant invective and polished sarcasm inspired the protectionist party with fallacious hope and confidence. On the death of Lord George Bentinck 1848, D. succeeded to the leadership of the protectionist party in the commons. He bore generous testimony to the political consistency and private worth of his predecessor in his *Lord George Bentinck, a Biography*. In 1852, the Earl of Derby, having undertaken the construction of a cabinet, offered him the post of chancellor of the exchequer. It was the first time a brilliant novelist had ever figured as the finance minister of a great commercial state, and it shows the versatility of his genius that he emerged with honor and credit from the ordeal. His second budget, 1853, failed, however, to find acceptance with the house of commons, and the government being outvoted upon it, the Derby cabinet ceased to exist. D. resumed the leadership of the opposition, from which he was again summoned 1858, to the post of chancellor of the exchequer in the second administration of Lord Derby. In 1859, he introduced a measure of parliamentary reform, which, being thrown out, was followed by the resignation of the government. For seven years the liberals remained in power, and D., in opposition, displayed talents as a debater, and a spirit and persistency under defeat, which won the admiration of his opponents. When Lord Derby returned to power 1866, July, D. again returned to the post of chancellor of the exchequer. It was he chiefly who induced the conservative party to pass the reform bill of 1867, his argument being, that the working-class householders are more conservative than those to whom the franchise had been previously extended. In 1868, Feb., D. succeeded Lord Derby as premier, but, in the face of a hostile majority, he resigned in Dec. following. On this occasion, Mrs. D., in acknowledgment of her husband's services, was raised to the peerage as Viscountess Beaconsfield (died 1872), D. then declining the honor in his own case. In 1870, D. published another novel, *Lothair*, marked by most of the merits and defects of those which preceded it. In 1873 the popularity of Mr. Gladstone subsided, and the election of 1874 giving the conservatives a large majority, D. returned to power as prime-minister. In 1877 D. took his seat in the upper house as Earl of Beaconsfield. Still premier, the earl was the guiding spirit of his cabinet during the critical years 1877–8, seeking by energetic action in eastern affairs to give an 'imperial' character to English policy; and he returned from the congress of Berlin bringing, as he said, 'peace with honor.' He was shortly thereafter decorated with the Garter. After a keen contest, in which the liberal leaders, headed by Mr. Gladstone, vigorously denounced government measures, especially in regard to the affairs of eastern Europe, Afghanistan, and s. Africa, the general election returned a large liberal majority; and the government resigned ere parliament assembled. The ex-primier, who held several honorary degrees as D.C.L. and LL.D., employed his leisure in publishing his last novel, *Endymion*, the hero of which is a successful English politician. The Earl of Beaconsfield took his share in public affairs as a member of the upper house till final illness in the spring of 1881. The terms of his will alone precluded the honor of a public funeral and burial in Westminster Abbey, proposed by the government.—See Hitchman, *The Public Life of Beaconsfield*, by Brandes (transl. 1880); the (hostile) *Life* by O'Connor (1878); Selected Speeches, edited by Kebbel (1882).

DISRAELI, ISAAC, D.C.L.: English author: 1766–1848; b. Enfield; descendant of a Hebrew family whose home was first in Spain, afterward in Italy. He was son of Benjamin D'Israeli, who came to England 1748, entered into business in London, amassed a fortune while in middle life, and retiring to Enfield, died 1817, aged 90. Isaac was educated at Amsterdam and Leyden, and began his career as poet and novelist; but, after the publication of the first vol. of his *Curiosities of Literature* (1791), he discovered that his forte lay not in creative literature, but in the illustration of history and literary character. His style is elegant and pleasing, presenting the fruits of antiquarian research and study without their dryness and general want of connection. No writer is more instructively amusing or amusingly instructive than he. Lord Byron speaks of him as 'that most entertaining and searching writer.' D.'s principal works are the *Curiosities of Literature* (1791–1823; new ed. with Life, Lond. 1851); *A Dissertation on Anecdotes* (1793); *Essay on the Manners and Genius of the Literary Character* (1795, 14th ed. 1850); *Inquiry into the Literary and Political Character of King James I.* (1816); *Commentaries on the Life and Reign of Charles I.* (1828–31); *Eliot, Hampden, and Pym* (1832); *Amenities of Literature* (1841)—for which he received from Oxford the degree D.C.L.

DISREGARD, v. *dĭs′rĕ-gârd′* [L. *dis*, not, and *regard*]: to neglect to take notice of; to omit to observe; to slight: N. neglect implying indifference or some degree of contempt. DIS′REGARD′ING, imp. DIS′REGARD′ED, pp. DIS′REGARD′ER, n. one who. DIS′REGARD′FUL, a. *-fûl*, neglectful; heedless.

DISRELISH, n. *dĭs-rĕl′ĭsh* [L. *dis*, not, and *relish*]: distaste or dislike; a slight degree of disgust: V. to dislike the taste of; to feel disgust at, as conduct or speech.

DISREPAIR, n. *dĭs′rĕ-păr′* [L. *dis*, not, and *repair*]: state of being not in repair or good condition.

DISREPUTE, n. *dĭs′rĕ-pūt′* [L. *dis*, asunder, and *repute*]: loss or want of repute; ill character; discredit; dishonor. DISREPUTABLE, a. *dĭs-rĕp′ū tă-bl*, low; mean; dishonorable; disgraceful. DISREP′UTABLY, ad. *-blĭ*, discreditably.

DISRESPECT, n. *dĭs′rĕ-spĕkt′* [L. *dis*, not, and *respect*]: want of respect; incivility; disesteem: V. to shŏw or feel disrespect to. DIS′RESPECT′FUL, a. *-fûl*, uncivil; wanting in respect. DIS′RESPECT′FULLY. ad. *-lĭ*.

DISROBE, v. *dĭs-rōb′* [L. *dis*, the opposite of, and *robe*]: to undress; to strip; to divest of covering. DISRO′BING, imp. DISROBED′, pp. *-rōbd′*. DISRO′BER, n. *-bėr*, one who.

DISRUPT, v. *dĭs-rŭpt′*. [L. *disruptus*, burst asunder—from *dis*, asunder; *ruptus*, broken]: to burst or rend in pieces; to separate. DISRUP′TING, imp. DISRUP′TED, pp. ADJ. in *geol.*, applied to the igneous matter which has forced its way through stratified rocks, and filled up the rents and fissures so made. Disrup'tion, n. *-rŭp'shŭn* [F.—L.]: the act of rending asunder; breach; rent. The Disruption, the great split or division in the Church of Scotland, 1843, by which upward of 400 ministers of the Church of Scotland (nearly two-fifths of the whole) left their churches and manses to vindicate principles which they deemed essential to the purity of that church, and in harmony with its earlier history. The word Disruption was chosen probably to indicate that these ministers did not look on their act as a *secession* or *dissent* from the Church of Scotland, but as a *split* or *division* within it, and the body formed by them assumed the name of the Free Church of Scotland: its practical effect, however, was a secession or dissent from the established church: see Free Church.

DISS, *dĭs:* market-town of the county of Norfolk, England; 19 m. s.s.w. of Norwich. There are brush manufactories and breweries. Pop. (1881) 3,845.

DISSATISFY, v. *dĭs-săt'ĭs-fī* [L. *dis*, the opposite of, and *satisfy*]: to fail to please; to give discontent to; to cause uneasiness to. Dissat'isfying, imp. Dissat'isfied, pp. *-fīd:* Adj. discontented; not pleased. Dissat'isfac'tion, n. *-făk'shŭn*, discontent: want of satisfaction. Dissat'isfac'tory, a. *-făk'tėr-ĭ*, causing discontent; displeasing; unable to give content. Dissat'isfac'toriness, n. inability to give content.—Syn. of 'dissatisfaction': displeasure; disapprobation; annoyance; discontentment; distaste; dislike.

DISSEAT, v. *dĭs-sēt'* [L. *dis*, asunder, and *seat*]: in *OE.*, to deprive of a seat; to unseat.

DISSECT, v. *dĭs-sĕkt'* [L. *dissectus*, cut asunder—from *dis*, asunder; *sectus*, cut]: to cut or divide a body in order to examine minutely its structure; to cut in pieces; to anatomize. Dissec'ting, imp. Dissec'ted, pp. Dissec'tor, n. one who dissects; an anatomist. Dissec'tible, a. *-sĕk'tĭ-bl*, that can bear dissection. Dissec'tion, n. *-shŭn* [F.—L.]: the act of cutting or separating the parts of a body for examination of its structure; a prepared specimen of dissected parts: see Anatomy, in Law. Dissection wounds, cuts, punctures, or abrasions, of the operator's skin in the act of dissection. The dangers in the practical study of anatomy have been much lessened during the last quarter of a century. The atmosphere of the dissecting-room, now comparatively pure by the application of proper ventilation and other sanitary measures, was, less than a generation ago, usually loaded with noxious emanations, tending to poison the blood of those who continuously inhaled it, and consequently produced nausea, sickness, diarrhœa, bad taste in the mouth, and other symptoms. Dissection wounds, always attended with some risk, were rendered more dangerous by the low state of the system, induced by the depressing influence of the surrounding air. Now, probably in consequence partly of the purer air, and partly of the general and extensive use of antiseptic injections into the vessels of the subjects to be dissected, it rarely happens that severe symptoms follow a cut or puncture; it being an established rule, that every puncture should be carefully sucked as soon as observed, and then freely touched with nitrate of silver. When, however, the poison has been absorbed, and is going to act, the patient begins to have a feeling of general illness in less than 24 hours. He is low-spirited, faint, chilly, and often complains of nausea. Then come rigors, intense headache, rapid and sharp (but weak) pulse, a coated tongue, vomiting (sometimes), and great restlessness.

The general symptoms increase in severity, the breathing becoming difficult, the pulse very rapid and weaker, the tongue dry, brown and often tremulous when protruded, and the skin more or less yellow. The case may terminate fatally at or before this stage; or abscesses may continue to form, from which the patient may more slowly sink; or if he survive, the arm may remain stiff and useless, or some of the fingers may be destroyed by gangrene. The treatment, both general and local, is similar to that of pyæmia (q.v.): see also POISONS.

As a precautionary measure in post-mortem examinations, the surgeon, especially if out of health, or if the patient have died from a disease of erysipelatous character, should thoroughly anoint his hands with lard. Very thin india-rubber gloves have been recommended as a safeguard to dissectors; but they have not been found serviceable; probably from the constraint to which they subject the action of the fingers.

DISSEIZE, or DISSEISE. v. *dĭs-sēz'* [L. *dis*, asunder, and *seize*, which see: Norm. F. *dissaiser*—from mid. L. *disseisĭārĕ*, to thrust out from possession of property]: in *law*, to dispossess wrongfully; to deprive of seizin or possession. DISSEIZ'ING, imp. DISSEIZED', pp. *-sēzd'*. DISSEIZ'IN, n. *-sēz'ĭn*, an unlawful dispossessing of a person of his lands or tenements. DISSEIZ'OR, n. one who puts another out of possession wrongfully. DISSEIZEE, n. *dĭs'sēz-ē'*, a person put out of possession unlawfully.

DISSEMBLE. v. *dĭs-sĕm'bl* [OF. *dissembler*, not to be alike—from *dis*, apart; *sembler*, to seem: L. *dissimŭlārĕ*, to disguise, to hide—from *dis*, not; *simĭlĭs*, like]: to act the hypocrite; to hide under a false appearance; to disguise under the appearance of truth; to simulate. DISSEM'BLING, imp.: ADJ. disguising; dishonest: N. dissimulation. DISSEM'BLED, pp. *-bld*. DISSEM'BLER, n. one who. DISSEM'BLINGLY, ad. *-lĭ*.—SYN. of 'dissemble': to disguise; conceal; cloak; cover; mask; feign; assume.

DISSEMINATE, v. *dĭs-sĕm'ĭ-nāt* [L. *dissemĭnātus*, scattered, as seeds—from *dis*, asunder; *sēmen*, seed: It. *disseminare*: F. *disséminer*]: to spread or scatter like seed; to propagate; to circulate; to diffuse. DISSEM'INATING, imp. DISSEM'INATED, pp. DISSEM'INATOR, n. one who. DISSEM'INA'TION, n. *-nā'shŭn* [F.—L.] the act of spreading or propagating. DISSEM'INA'TIVE, a. *-nā'tĭv*, tending to disseminate.—SYN. of 'disseminate': to spread; diffuse; disperse; scatter.

DISSENSION, etc.: see under DISSENT.

DISSENT, n. *dĭs-sĕnt′* [L. *dissen′tiĕns* or *dissentĭĕn′tem*, disagreeing—from *dissentīrĕ*, to disagree—from *dis*, asunder; *sentiō*, I think: It. *dissentire*]: difference of opinion; disagreement; difference in opinion from the Established Church in matters of government or doctrine; separation from Established Church; nonconformity: V. to disagree in opinion; to think differently; to differ in opinion and separate from the Established Church in matters of doctrine or government. **DISSEN′TING**, imp.: ADJ. having the character of dissent or belonging to it. **DISSEN′TED**, pp. **DISSEN′TER**, n. one who differs from the Established Church in doctrine or government; a nonconformist; one who separates from the communion of an Established Church. **DISSEN′TIENT**, a. *-sĕn′shĭ-ĕnt*, disagreeing: N. one who disagrees and declares his dissent, **DISSEN′SION**, n. *-shŭn* [F.—L.]: disagreement in opinion; strife; contention in words; discord. **DISSEN′TIOUS**, a. *-shŭs*, or **DISSEN′SIOUS**, a. *-shŭs*, disposed to discord; quarrelsome. *Note.*—In quite early times, *dissent* in doctrine from a national church was called *heresy*, and *dissent* in discipline and practical order, *schism;* these terms and their distinctive applications are still in good use.—SYN. of 'dissent, n.': variance; difference; nonconformity; separation; diversity.

DISSEN′TERS: common appellation of those who dissent or differ from the established church of their country in any of its authoritative doctrines, or in any part of its constitution, and therefore separate themselves from it. Although sometimes employed as a sufficiently appropriate designation of the sects which separated themselves from the general body of the church during the early and middle ages, the term dissenters belongs to modern times and Protestant countries; the claims of the Rom. Cath. Church, where dominant, having always been asserted in a manner incompatible with the existence of legally recognized religious dissent. The measure in which the rights of dissenters are conceded by law, may be esteemed a fair test of religious liberty in a country, and of the general enlightenment of a people—according to the low standard of religious liberty which is in vogue where one sect is exclusively established as a national church. The term dissenters is of English origin and growth, though its almost exact equivalent may be said to have existed in Poland in the name *Dissidents*, used in 1573 to denote the Polish Protestants, in distinction from the adherents of the established Rom. Cath. religion. After 1632, the term Dissidents was applied in Poland to Lutherans, Greeks, Armenians, etc.

In England, the term dissenters appears to have come into use in the 17th c., as synonymous with *Nonconformists;* and from England its use was transferred to Scotland in the 18th c., after the Secession (q.v.) Church had been founded in that country. It is usually applied to those who agree with the established church in the most essential doctrines, but differ from it on some minor point, or on questions of church government, relation to the state, rights, etc.; as in

England to Presbyterians, Congregationalists, and Baptists. The claim of the Church of Rome to be regarded as the *Catholic* Church prevents its members from accepting the name of dissenters, and others, in courtesy, seldom seek to apply it to them. On somewhat similar grounds, it is rejected by *Episcopalians* in Scotland, and its application to them is not usually urged by others; and for very different reasons, elsewhere explained, the *Methodist* (q.v.) churches are seldom included in it, as ordinarily used. Since the beginning of the 18th c., the Presbyterian, Congregationalist, and Baptist denominations in England, have been associated under the name of the *Three Denominations* See ESTABLISHED CHURCH: NONCONFORMISTS: PURITANS: TOLERATION, etc.

The term dissenters is not strictly legal or ecclesiastical, those to whom it applies being usually described in legal language by a periphrasis. It is a convenient term to designate those Protestant denominations which have dissented from the doctrine and practice of the church as by law established. Immediately after the Reformation in England, Episcopacy being established by law, dissenters, or nonconformists as then called, were subjected to severe restrictions and penalties. 'During the Rebellion, the laws against Protestant sectaries were repealed; but they revived at the Restoration; and the parliament of Charles II. proceeded to enforce systematically, by new measures of vigor, the principle of universal conformity to the established church.' In 1690, the restrictions on dissenters were first relaxed, and certain denominations were suffered to exercise their own religious observances. From that period, various statutes have been passed, each extending in some degree the free exercise of religious opinion. At the present time, dissenters of all denominations are allowed to practice without restraint their own system of religious worship and discipline They are entitled to their own places of worship, and to maintain schools for instruction in their own opinions. They are permitted also, in their character as householders, to sit and vote in the parish vestries. A dissenter, if a patron of a church, may also exercise his own judgment in appointing a clergyman of the Church of England to a vacant living. (See Stephen's *Eccles. Law.*)

In Scotland, where Presbyterianism is established by law. a similar amount of religious liberty obtains, not so much derived from or guarded by special statute, but fully recognized by decisions of courts, as belonging to the law of the land.

DISSEPIMENT, n. *dĭs-sĕp'ĭ-mĕnt* [L. *dissepīrĕ*, to separate—from *dis*, asunder; *sēpēs*, a hedge, a fence]: a partition: in *botany*, the partition between two carpels (q.v.) in an ovary or fruit composed of a number of carpels. A dissepiment is formed by the union of the sides of two carpels. Sometimes dissepiments meet in the centre or axis, completely dividing the ovary or fruit into cells; sometimes they are partial, appearing as mere projections from the outer walls of the ovary or fruit, and leaving it one-celled. Many ovaries and fruits exhibit partitions not formed by the union of the sides of carpels; these are sometimes called *spurious dissepiments.* D. is applied also to a partition in a coral.

DISSERTATION, n. *dĭs'sėr-tā'shŭn* [F. *dissertation*—from L. *dissertātĭōnem*, a dissertation or discourse—from *disserto*, I argue or debate a thing]: a formal discourse written on any subject; a treatise; a disquisition. DISSERTA'TOR, n. *-tėr*, one who writes a dissertation. DISSERTA'TIONAL, a. *-shŭn-ăl*, pertaining to.

DISSERVE, v. *dĭs-sėrv'* [L. *dis*, asunder, and *serve*]: to injure; to hurt or harm. DISSERVICE, n. *dĭs-ser'vĭs*, injury; harm. DISSER'VICEABLE, a. *-ă-bl*, injurious; hurtful DISSER'VICEABLENESS, n. *-bl-nĕs*, injury; mischief.

DISSEVER, v. *dĭs sĕv'ėr* [OF. *dessevrer*—from *des* for L. *dis*, intensive; *sevrer*, to sever (see SEVER)]: to part in two; to divide or tear asunder; to separate. DISSEV'ERING, imp. DISSEV'ERED, pp. *-ėrd.* DISSEV'ERANCE, n. *-ėr-ăns*, separation; the act of dissevering; also DISSEV'ERA'TION, n. *-ā'shŭn.*

DISSIDENT, a. *dĭs'sĭ-dĕnt* [F. *dissident*—from L. *dissĭdens* or *dissĭden'tem*, being at variance—from *dis*, asunder; *sĕdĕō*, I sit]: not agreeing; discordant: N. a dissenter; one who votes or gives his opinions about any point in opposition to others. DIS'SIDENTLY, ad. *-lĭ.* DIS'SIDENCE, n. *-dĕns* [F.—L.]: discord; disagreement. DIS'SIDENTS, n. plu. a name applied on the continent of Europe to adherents of the Lutheran, the Calvinistic, and the Greek churches: see DISSENTERS.

DISSILIENT, a. *dĭs-sĭl'ĭ-ĕnt* [L. *dissĭlĭēns* or *dissĭlĭĕn'tem*, leaping asunder, flying apart—from *dis*, asunder; *sălĭēns*, leaping]: starting asunder; in *bot.*, applied to seed-vessels which burst and open with an elastic force. DISSIL'IENCE, n. *-ĕns*, act of leaping or starting asunder.

DISSIMILAR, a. *dĭs-sĭm'ĭ-lėr* [F. *dissimilaire*—from L. *dissim'ĭlis*, unlike—from *dis*, not; *simĭlĭs*, like: It. *disimile*]: unlike; not similar. DISSIM'ILAR'ITY, n. *-lăr'ĭ-tĭ*, unlikeness; want of resemblance. DISSIM'ILARLY, ad. *-lėr-lĭ.* DIS'SIMIL'ITUDE, n. *-sĭ-mĭl'ĭ-tūd* [L. *dis*, and *similitude*]: want of resemblance; a comparison by contrast.

DISSIMULATION, n. *dĭs-sĭm'ū-lā'shŭn* [F. *dissimulation*—from L. *dissimŭlātĭōnem*, a dissembling, a concealing—from *dis*, intensive; *simŭlo*, I feign]: false pretension; a concealing of something; a hiding under a false appearance; a feigning; hypocrisy.

DISSIPATE, v. *dĭs'sĭ-pāt* [L. *dissĭpātus*, scattered, dispersed: It. *dissipare:* F. *dissiper*]: to scatter completely; to dissolve and disappear; to vanish; to expend; to squander: to consume. DIS'SIPATING, imp. DIS'SIPATED, pp.: ADJ. debauched; dissolute. DIS'SIPA'TION, n. *-pā'shŭn* [F.—L.]: the act of scattering completely; the insensible diminution of a body; an irregular, extravagant course of life; dissoluteness.—SYN. of 'dissipate': to disperse; scatter; waste; dispel; spend; lavish.

DISSOCIATE, v. *dĭs-sō'shĭ-āt* [L. *dissŏcĭātus*, separated from fellowship—from L. *dis*, asunder; *sociō*, I unite]: to separate from fellowship; to disunite; to part. DISSO'CIATING, imp. DISSO'CIATED, pp. DISSO'CIA'TION, n. *-ā'shŭn*, sometimes *disassociation*, the act of disuniting or separating; in *chem.*, the breaking up of a compound body into its constituent parts by heat alone—thus, steam is dissociated into oxygen and hydrogen by being passed through a red hot tube: the term was thus applied first by Henry St. Clair Deville. DISSO'CIABLE, a. *-ă-bl*, not well united or assorted; that cannot be brought to fellowship. DISSO'CIABIL'ITY, n. *-bĭl'ĭ-tĭ.*

DISSOLUBLE, DISSOLUBILITY: see under DISSOLUTE.

DISSOLUTE, a. *dĭs'sō-lôt* [L. *dissŏlūtŭs*, loose, reckless—from *dis*, asunder; *solūtŭs*, loosed, unbound: It. *dissoluto:* F. *dissolu*]: given to vice and dissipation; loose in behavior; profligate. DIS'SOLUTELY, ad. *-lĭ.* DIS'SOLUTENESS, n. looseness; laxity of manners; debauchery. DIS'SOLU'TION, n. *-lô'shŭn* [F.—L.]: the act of dissolving or liquefying; the separation of the parts of a body by putrefaction, etc.; separation of the soul from the body; death; the breaking up of an assembly or partnership. DIS'SOLUBLE, a. *-sŏl-ū-bl* [F.—L.]: that may have its parts separated by heat or moisture; that may be disunited. DIS'SOLUBIL'ITY, n. *-ū-bĭl'ĭ-tĭ*, capacity of being dissolved by heat or moisture. DISSOLUTION OF MARRIAGE: see DIVORCE.—SYN. of 'dissolute': disorderly; licentious; wanton; wild, vicious; uncurbed; debauched; luxurious; lax; lewd; rakish; unrestrained; abandoned.

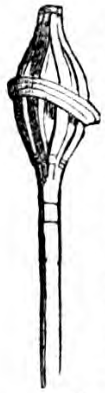
DISSOLVE, v. *dĭz-zŏlv'* [L. *dissolvĕrĕ*, to separate, to dissolve—from *dis*, asunder; *solvo*, I loose: It. *dissolvere*]: to become disseminated through a liquid, said of a solid, as sugar in water; to break up; to separate; to destroy; to consume or waste away; to be broken; to come to an end. DISSOL'VING, imp. DISSOLVED', pp. *-zŏlvd'*. DISSOL'VENT, a. *-vĕnt*, having power to dissolve: N. any substance which has the power of dissolving a solid body. DISSOL'VER, n. that which dissolves; a vessel for dissolving in. DISSOL'VABLE, a. *-vă-bl*, capable of being dissolved; that may be converted into a fluid. DISSOL'VABLENESS, n. *bl-nĕss*, the quality of being dissolvable. DISSOLVING VIEWS, pictures painted upon glass and made to appear of great size and with great distinctness upon a wall by means of a magic lantern with strong lenses and an intense oxyhydrogen light, and then—by removal of the glass from the focus, and gradual increase of its distance—apparently dissolved into a haze, through which a second picture is made to appear by means of a second slide (sometimes by a second magic-lantern), at first with a feeble, afterward with a strong light. Subjects are chosen to which such an optical illusion is adapted, such as representations of the same object or landscape at different periods. *Note.—Melt* is to bring a solid substance into a liquid condition by means of heat; *dissolve* is to bring from the solid state by distributing the particles of a solid substance among the particles of another substance—as sugar among water.

DISSONANT, a. *dĭs'sŏ-nănt* [F. *dissonant*—from L. *dissonans* or *dissonan'tem*, disagreeing in sound—from *dis*, asunder; *sŏnans*, sounding: It. *dissonante*]: discordant; inharmonious; unpleasant to the ear; harsh; disagreeing. **DIS'SONANCE**, n. *-năns* [F.—L.]: a discord; any sound harsh or unpleasant to the ear. In *music*, dissonance is the opposite of consonance, and denotes those intervals in music whose relative proportions are to a certain extent unsatisfactory to the ear, and produce a degree of disquietude. In a special sense, the term dissonance is applied to the interval causing the unpleasant effect; which sound is not always, as some think, the upper note, but may be the middle or the lowest note. Many believe that the feeling of dissatisfaction produced by the dissonances of music arises from the mind not being able without difficulty to comprehend at once the arithmetical proportions of the vibrations. The foundation of dissonance, however, is generally allowed to be more æsthetical than intellectual, as through the vibrations of a sounding body the air is put into a similar state of vibration, which is communicated to our ear, and so to our whole nervous system, through which we obtain the inward feeling representing the sound. In music, dissonance may be called a necessary æsthetical evil, which is used in the finest musical works for the purpose of producing pleasant contrasts, with their resolutions. In modern music, dissonance is divided into *essential* and *accidental;* the former arising fundamentally, the latter arising from passing notes, anticipations, suspensions, etc.: see HARMONY.

DISSUADE, v. *dĭs-swād'* [F. *dissuader*—from L. *dissuādērĕ*, to oppose by argument—from *dis*, asunder; *suādĕō*, I advise or incite; *suāsus*, advised, incited: It. *dissuadere*]: to advise or exhort against; to attempt to draw from a measure or purpose by reasoning or motives. **DISSUA'DING**, imp. **DISSUA'DED**, pp. advised against; induced not to do something. **DISSUA'DER**, n. one who. **DISSUA'SION**, n. *-swā'zhŭn* [F.—L.]: advice against something. **DISSUA'SIVE**, a. *-zĭv*, tending to dissuade: N. argument or counsel employed to deter from a measure or purpose. **DISSUA'SIVELY**, ad. *-lĭ*.

DISSYLLABLE, n. *dĭs-sĭl'lă-bl* [OF. *dissyllabe*, of two syllables—from L. *disyllabus*—from Gr. *dis*, twice; *sullăbē*, a syllable]: a word of two syllables. **DIS'SYLLAB'IC**, a. *lăb'ĭk*, consisting of two syllables. **DIS'SYLLABICA'TION**, n. *-lăb-ĭ-kā'shŭn*, or **DIS'SYLLAB'IFICA'TION**, n. *-fĭ-kā'shŭn* [L. *facĭō*, I make]: act of forming into two syllables. *Note.*—To spell *dissyllable* with *ss*, and *trisyllable* with *s* only, is incorrect: *dis* and *tris* are the respective prefixes; and as the root in each is *syllable*, the spelling should be *ss* in both. The spellings of the English words have been taken directly from the French, but have become confused with the Latin and Greek.

DISTAFF, n. *dĭs'tăf* [Low Ger. *diesse*, the bunch of flax on the distaff: Bav. *doschen*, a bush, a tuft: Sw. *dissa*, to suck—the stream of milk from the teat appearing like the thread drawn from the flax on the distaff; the latter element is the Eng. STAFF: AS. *distæf*]: the staff on which a bunch of flax or tow is tied in spinning, and from which the thread is drawn. A distaff of a very elegant construction is represented in art, and was no doubt generally used in antiquity. It is made of a cane-stick, the top of which is slit in such a manner that the portions, when bent downward, form a receptacle for the flax or wool. A ring was put over the top, for the purpose of keeping the divided ends of the cane together. The accompanying illustration is from Fairholm's *Dictionary of Terms in Art.* In mythologic art, the distaff was dedicated to Pallas; and the Fates are always represented with it, and engaged in spinning the thread of life. It has ever been considered as the peculiar emblem of woman's as distinguished from man's occupation, and has come to be used figuratively for a woman.


Distaff.

DISTAFF THISTLE: *Carthamus alatus.*

DISTAIN, v. *dĭs-tān′* [OF. *desteindre;* F. *déteindre*, to discolor—from L. *dis*, asunder; *tingĕrĕ*, to dye]: to stain; to discolor; to blot; to defile. DISTAIN′ING, imp. DISTAINED′, pp. *-tānd′*.

DISTAL, a. *dĭs′tăl* [a probable corruption of *distant*]: in *anat.*, remote from the place of attachment, as the *distal* extremity of a bone—the opposite or *proximal* end being that nearer the attachment of the limb with the trunk.

DISTANCE, n. *dĭs′tăns* [F. *distance*—from L. *distantĭă*, remoteness—from *dis*, asunder; *stans*, standing: It. *distanza*]: the interval or space between two objects, events, or periods; remoteness; any particular or undefined length of time; reserve; coldness; an interval in music; in *art*, that portion of a picture where the visual rays meet; the limit of view in a picture, or *point* of *distance*, as it is called in perspective; the *middle distance* being the central portion between the extreme distance and the foreground. The art of producing on the eye the effect of real distance, so far as it is not accomplished by mere mechanical rules, is one of the most subtle branches of landscape-painting, and cannot be acquired otherwise than by long experience, and a careful study of the effects of light and shade. See PERSPECTIVE. DISTANCE, v. to place remotely; to leave behind in a race. DIS′TANCING, imp. DIS′TANCED, pp. *-tănst*, left so far behind as to be out of a race; outstripped. DIS′TANT, a. *-tănt* [F.—L.]: separate; standing apart; remote in time, place, connection, etc.; remote in view; reserved; cold; somewhat haughty. DIS′TANTLY, ad. *-lĭ*. TO KEEP ONE'S DISTANCE, to have no intercourse with; to stand aloof.—SYN. of 'distant': far; faint; slight; indistinct; indirect; shy; reserved; obscure; repugnant.

DISTASTE, n. *dĭs-tāst′* [L. *dis*, asunder, and *taste*]: dislike of food or drink; dislike of anything; a slight degree of disgust; disrelish: V. to dislike. DISTASTE′FUL, a. *-fûl*, offensive; nauseous; unpleasant to the taste. DISTASTE′FULLY, ad. *-lĭ*. DISTASTE′FULNESS, n. the quality of being distasteful; dislike.—SYN. of 'distaste, n.': disgust; dislike; aversion; disinclination; displeasure; dissatisfaction; discomfort; loathing; offense; nausea.

DISTEMPER, n. *dĭs-tĕm′pĕr* [OF. *destemprer*, to derange, to disorder—from *des* for L. *dis*, asunder; F. *temprer*, to qualify, to temper—from L. *temperārĕ*, to mingle in due proportion—*lit.*, that which is not mingled in due proportions, as the humors of the body]: the diseased state of an animal; disease; malady; a morbid state of mind; a disease in dogs beginning with a running from the nose and eyes: V. to disorder; to derange body or mind. DISTEM′PERING, imp.: ADJ. disordering. DISTEM′PERED, pp. *-pĕrd*: ADJ. diseased; disordered; out of temper.—SYN. of 'distemper, n.': sickness; complaint; ailment; disorder; illness; indisposition.

DISTEMPER, n. *dĭs-tĕm′pĕr* [OF. *destemprer*, to soak in water—from *des* for L. *dis*, intensive, and *temprer*, to steep, to dip—from L. *distemperārĕ*, to temper steel, to mix: It. *distemperare*, to dissolve any liquor or fluid; *tempera*, water-colors (see DISTEMPER 1)]: in *painting*, the preparation of colors with size and water, or gum-water; coarse mode of painting, in which the colors—inferior to those usual with artists—are mixed in a watery glue, such as size and whiting. The chief purposes for which distemper is now used are scene-painting and staining papers for walls. But it is known that the old masters frequently executed pictures and portions of pictures in distemper, and then oiled them, by which means they acquired the character of being painted originally in oil. It is said that Paul Veronese sometimes began his pictures in distemper, and finished them in oil, and that he frequently painted his skies in distemper. Distemper is often ignorantly supposed to be identical with fresco (q.v.) The difference is, that while in the former the colors are laid on a dry surface, in the latter they are put on wet mortar or plaster. See GELATINE. DISTEMPER, v. to mix colors with size and water, etc. TO PAINT IN DISTEMPER, to paint with colors mixed with size or gum-water instead of oil, and on a dry surface: see TEMPERA.

DISTEM′PER, in Dogs: typhoid inflammation affecting the upper air-passages of young dogs. Like scarlatina and similar diseases of children, it is generally contagious, occurs only once in a lifetime, runs a definite course, is accompanied by low fever and debility, and is most successfully treated by good nursing and attention to diet and regimen. The eyes are red, weak, and watery; the nose dry and hot; draughts of air or movements of the animal readily excite sneezing or cough; there is dulness, fever, and loss of appetite. The thickened slimy mucus which the inflamed membrane, after some days, secretes, accumulates about the eyes and nostrils, and lodging in the bronchial tubes, prevents the free access of air, and the proper purification of the blood. Hence ensue distressed breathing, increasing weakness, and symptoms of nervous disturbance, such as staggering gait, chorea (q.v.), and fits. All dogs are liable to D.; but the delicate, highly bred, and artificially treated varieties suffer most severely, and among them the mortality is very great. Bleeding, physicking, and all irritating and reducing remedies, must be carefully avoided, and a good dry bed in a comfortable airy place provided. The stomach, which is generally overloaded, should be relieved of its contents by an emetic, which, for an ordinary sized English terrier, may consist of two grains each of tartar emetic and ipecacuanha, with eight or ten grains of common salt, given in a wine-glassful of tepid water. If no effect is produced, the dose must be repeated in 20 minutes. Constipation, if present, should be corrected by half an ounce each of castor and olive oil, to which, in large dogs, a few grains of gray powder is a useful addition. The febrile symptoms, if acute, may be alleviated by giving four times daily, in cold water, two drops of tincture of aconite, and five grains each of nitre and extract of belladonna. Distressed breathing will be relieved by applying to the chest and sides, for an hour or two continuously, a thick flannel cloth, wrung at short intervals out of hot water. The throat may also be rubbed with hartshorn and oil, and the nostrils sponged and steamed occasionally. Give frequently, and in small quantities at a time, milk and bread, or any other such simple and digestible food, and when recovery is tardy, and weakness ensues, endeavor by nursing, tonics (q.v.), and stimulants (q.v.) to support the strength.

The term distemper is sometimes applied to influenza in horses, and epizootic pleuro-pneumonia (q.v.) in cattle.

DISTEMPER IN HORSES, often called *Strangles*, is a contagious disease occurring principally in colts and young horses, and seldom appearing after the eighth year. It is characterized by debility and loss of appetite, and accompanied by cough, inflamed appearance of the nasal membranes, red and watery eyes, and thin discharge from the nose, constipation, scanty and high-colored urine, thirst and general feverish condition of the system. A swelling appears between the bones of the lower jaw which usually results in an abscess. When this discharges relief is immediate, and if well fed and properly cared for the subject soon recovers. This form of the disease runs its course in from ten days to several months. Sometimes the swelling hardens and matter is deposited in the lungs or in other internal organs. Many cases of this form prove fatal. *Causes:* change of food, exposure to cold and storms, impure air, contagion, and change of climate. *Treatment:* medicine is seldom required. Separate the animal from other horses, give soft, nourishing food, keep in a warm, well-ventilated stable, poultice the swelling, and open the abscess when it comes to a head. In severe attacks give stimulants and tonics to keep up the strength, and relieve constipation by injections of warm water. See INFLUENZA.

DISTEMPERATURE, n. *dĭs-tĕm'pėr-ă-tūr* [L. *dis*, asunder, and *temperature*]: excess of heat or cold, or of other qualities; perturbation of mind; confusion; indisposition; in *OE.*, perturbation of the mind; disorder; sickness, confusion.

DISTEND, v. *dĭs-tĕnd′* [F. *distendre*—from L. *distendĕrĕ*, to stretch asunder—from *dis*, asunder; *tendo*, I stretch; *tensus* or *tentus*, stretched: It. *distendere*]: to stretch or spread in all directions; to enlarge or expand; to swell. **Distend′ing**, imp. **Distend′ed**, pp.: Adj. stretched out in different directions. **Disten′tion**, or **Disten′sion**, n. *-tĕn′shŭn* [F. *distension;* L. *distentiōnem*]: the state of things stretched or swelled; the act of swelling or enlarging; the space occupied by the thing distended. **Disten′sible**, a. *-sĭ-bl*, capable of being distended or dilated. **Distent**, a. *dĭs-tĕnt′* [L. *dis*, *tensus* or *tentus*, stretched out]: in *OE.*, distended.—Syn. of 'distend'· to dilate; extend; stretch; inflate.

DISTICH, n. *dĭs′tĭk* [L. *distichus*, consisting of two rows: Gr. *distichon*, a couplet—from Gr. *dis*, twice; *stichos*, a row, a verse]: classical term for any two poetic lines, especially a hexameter and pentameter, making complete sense; a couplet. It was much used by the Greeks and Romans for the expression of single thoughts and sentiments; hence it became almost exclusively employed for the classical epigram. The great poets of modern Germany, Goethe, Schiller, etc., also have shown a fondness for the distich, and remarkable skill in the use of it. A collection of moral maxims in Latin ascribed to a certain Cato, Dionysius (q.v.), are called *Disticha*, and were highly popular during the middle ages. **Dis′tichous**, a. *-ŭs*, disposed in two rows on the opposite sides of a stem or axis, as the grains in an ear of barley.

DISTICHIACEÆ, n. plu. *dĭs-tĭk-ĭ-ā′se-ē* [Gr. *distichia*, a double line—from *dis*, twice; *stichos*, a row, order, or line]: family of operculate acrocarpous, i.e., terminal fruited, mosses, of cespitose habit, and fruit consisting of oval, equal capsules. **Distich′ium**, n. genus of mosses, type of the family *Distichiaceæ*.

DISTIL, v. *dĭs-tĭl′* [F. *distiller*, to distil—from L. *distillārĕ* for *destillārĕ*, to drip or trickle down—from *de*, down; *stillo*, I drop—*lit.*, to drip or trickle down in drops]: to vaporize by heat and then reconvert into the liquid state; to separate a more volatile part, as spirit or essential oil, from a substance by vaporizing and then cooling the vapor; to let fall in drops; to flow gently. **Distil′ling**, imp.: N. the act or process of extracting spirit by heat. **Distilled′**, pp. *-tĭld′:* Adj. extracted by heat or by dropping. **Distil′ler**, n. one who distils. **Distil′lable**, a. *-lă-bl*, capable of being distilled. **Dis′tillate**, n. *-lāt* [L. *distillātus*, distilled]: the product resulting from distillation. **Dis′tilla′tion**, n. *-lā′shŭn* [F.—L.]: the manufacture of ardent spirits or alcoholic liquors from grain, etc ; the operation of extracting a spirit from any substance by evaporation by heat, and subsequent condensation. **Distil′latory**, a. *-tėr-ĭ*, pertaining to distillation. **Distil′lery**, n. *-lėr-ĭ*, the buildings and works where distilling is carried on. **Distil′ment**, n. in *OE.*, the thing let fall softly and insidiously by drops. **Fractional distillation**, a process of distilling in which the distillate is removed after every small rise of temperature.

DISTILLA'TION: important process in the arts, consisting essentially in converting a liquid into vapor in a close vessel, by heat, and then conveying the vapor into another cool vessel, where it is condensed again into a liquid. When applied to a solid, the process is called *Sublimation.* The object of D. is to separate one substance from others with which it may be mixed. In D. proper, no chemical decomposition takes place; when any of the substances are decomposed, it is called DESTRUCTIVE DISTILLATION (q.v.). The possibility of separating substances by vaporizing them depends upon the fact, that very few substances are volatile at the same temperature. Thus, water boils or becomes rapidly converted into vapor at 212°, alcohol at 173°, sulphuric ether at 94·8, while oil of turpentine must be raised to 318°, and mercury to 662°; and some substances, again, are altogether *fixed.* By applying the proper degree of heat, then, *and no more,* the more volatile of two substances may be expelled from the less volatile; and supposing the vapors of the two to rise mixed, as they are gradually cooled, that of the less volatile will be condensed before the other, thus affording another opportunity of separation.

It is often, however, difficult to obtain a perfectly pure product by D., owing to another fact in chemistry—namely, that many bodies which, when pure, require a high temperature to vaporize them, become more easily vaporized when mixed with substances more volatile than themselves. Because to this, it is impossible to obtain, by D. alone, alcohol perfectly free from water. But this chemical fact is sometimes turned to good account in another way. By distilling, for instance, parts of plants with water, the essential oils pass over with the steam, and are then separated from the condensed water by other processes.

The applications of D. are numerous both in chemistry and in the practical arts. Pure water is obtained by D., the most of the substances dissolved in natural waters being fixed. Sea-water may thus be rendered drinkable, and there are apparatus for this special purpose. But wherever there are cooking-utensils, a distilling apparatus might be improvised. The pure water that descends from the clouds is produced by the same process on a large scale: see EVAPORATION. It is no figure of speech to say that the dews are 'distilled.'

The extraction of zinc from the ore is a D.; the metal, when reduced, passes over in vapor, and is condensed in a separate vessel. When the zinc ore contains cadmium, this metal, being more volatile, comes over in the first portions, and may be removed. When mercury is used to extract particles of gold from sand, the mercury is distilled off from the amalgam, leaving the gold, which is fixed. The mercury being condensed, is again ready for use.

The most extensive application of D. is in the manufacture of intoxicating spirits, and in ordinary language this is the most common use of the word. Strictly speaking, indeed, the spirits are produced not by the act of D., but by the previous step of fermentation (q.v.); and D. merely separates the spirits from the mixture in which they already exist. However, the whole process may be described under this head.

All the intoxicating drinks used in ancient times seem to have been products of fermentation merely. The art, as it has been called, of evoking the fiery demon of drunkenness from his attempered state in wine and beer, is a discovery of modern times. Is is mentioned first by an Arabian physician of the 11th c., Abulkasem, though the invention is attributed by some to the northern nations. The name *aquæ vita*, given to distilled spirits by early physicians and alchemists, shows their estimate of the discovery. Raymond Lully 'declares this admirable essence to be an emanation of the Divinity, an element newly revealed to man, but hid from antiquity, because the human race were then too young to need this beverage, destined to revive the energies of modern decrepitude.' Sadly have these anticipations been belied.

Spirits were distilled first from wine, and hence called spirits of wine. An endless variety of substances are now used in this extensive manufacture. Alcohol (q.v.) is the essential ingredient of all spirits, and it results from the decomposition of sugar, which, by the process of fermentation, is resolved into carbonic acid and alcohol. *Sugar*, then, is the direct source of alcohol, and accordingly all vegetable products containing sugar, such as grapes, the sugar-cane, sweet fruits, beet-root, etc., may be used in the manufacture of spirits. But there is another more abundant vegetable substance—namely, *starch*—which is easily convertible into sugar, and thus becomes indirectly a source of alcohol. In malt, and in germinating seeds generally, there is found a substance called *diastase* (q.v.). If a small quantity of this, or of an infusion of malt, be added to a paste of starch, it will in a short time become thin and sweet, the whole of the starch being transformed into sugar: see BEER. It is thus that grain of all kinds, potatoes, and other substances which contain little or no free sugar, are yet capable of yielding alcoholic spirits.

Thus, all substances containing either sugar or starch, or both, will yield spirits. With sugar, the manufacture consists of two processes—fermentation and distillation. When starch is the original source, as commonly in distilleries, the first step is to convert it into sugar, or to *saccharify* it. This is the object of what is technically called *mashing*, which consists in mixing the materials in a triturated state with water at the temperature of about 160°. It is mostly from barley, oats, and rye that spirits are manufactured; wheat is less used, owing to its cost. Raw grain is ground to meal; malt is only bruised. A certain proportion of malt is always used, even in distilling from raw grain or potatoes, as the diastase of the malt is necessary to start the saccharine fermentation. After being agitated for two or three hours, the saccharine infusion, called *wort*, is drawn off from the grains, and cooled. To this wort is now added a certain quantity of yeast or barm, which induces the vinous fermentation, and resolves the saccharine matter into alcohol and carbonic acid, accompanied by a rise of temperature. The alcoholic mixture which results is called the *wash*, and is ready for distillation. This takes place in an apparatus called a still, or alembic (q.v.). In its older and simpler form, the still consists of a copper vessel, into which the wash is put. This vessel is provided with a close head, terminating in a bent tube, which passes, in a spiral form (the worm), through the refrigeratory, filled with cold water: see STILL. When heat is applied to the still, the spirit begins to rise in vapor at 176°, with more or less steam; these vapors pass through the worm, become condensed by the cold, and drop or trickle in the form of liquid into a receiver. The product of this first D. in a simple still is called *low wines*. This is then redistilled at a lower temperature, in order to deprive it of part of the water and of the fetid oils that had passed over with the alcohol. To obtain great purity and strength, repeated D. is used.

A great improvement in distilling was invented 1801 by a workman of Montpellier, France, of the name of Adam. By making the vapors arising from the still pass through a series of winding passages, maintained at a determinate degree of heat, and deposit part of their water and other impurities, he was able to obtain from wine a spirit of any required cleanness and strength *at one operation*. This principle has been adapted by Pistorius of Berlin (1817), to the D. of the coarser washes of grain and other materials.

Absolute or anhydrous alcohol (q.v.) cannot be obtained by D. alone. Rectified spirit, or spirit of wine, for burning in a lamp, still contains, when of ordinary strength, about 25 per cent. of water. Alcohol is considerably lighter than water, its specific gravity being 793 (water, 1,000). The stronger any spirit is, then, the less will be its specific gravity; and thus the strength of spirits may be ascertained by an instrument which measures their specific gravity, the *areometer* (q.v.) or *hydrometer*. The excise of Great Britain has established one degree of strength as the legal standard, and this is called *proof*. The specific gravity of proof-spirit is 918·6, and it contains nearly equal weights of water and alcohol.

If only alcohol and water passed over in D., all spirits, from whatever extracted, would be the same; but this is not the case. Brandy, which is distilled from wine, has a peculiar essential oil derived from the grape, and also some acid; rum is impregnated with an essential oil from the sugar-cane, and with other impurities; malt liquor has the essential oil of barley, etc. It is these essential oils that give to the various spirits their distinguishing flavors. Some of the oils and other impurities are disagreeable and positively noxious; and it is one of the objects of *rectifying* to remove these. The mellowing effect of age upon spirits is owing to the evaporation or spontaneous decomposition of the essential oils. Newly distilled spirits are in general fiery, and specially unwholesome.

Sugar, when fermented, resolves itself into nearly equal weights of carbonic acid and alcohol; a pound of sugar, therefore, should yield upward of half a pound of proof-spirit. The quantity of spirit afforded by different grains depends upon the proportion of starch that they contain: 100 lbs. of starch is calculated to yield 35 lbs. of alcohol, equal to nearly 8 gallons of proof-spirits. Of the various grains, wheat is the most productive. Taking the average of wheat, barley, rye, oats, and maize, 100 lbs. of corn yield 40 lbs. of spirit of specific gravity 942 = 3·47 gallons proof. A distiller of malt whisky, says Dr. Ure, calculates on obtaining two gallons of proof-spirits from one bushel of malt in ordinary years. The highest yield is 20 gallons per quarter of 8 bushels.

The principal intoxicating beverages produced by D. are: 1. Brandy (q v.), which name is applied properly only to spirits distilled from wine. 2. Rum is manufactured from molasses and other uncrystallizable products of the sugar-cane. 3. Corn or malt spirit, under the various names of British spirits, gin, whisky, etc. The Dutch distillers give a peculiar flavor to their spirits (Hollands) by adding a portion of juniper-berries to the other ingredients. From the French name of the juniper, *genièvre*, come *geneva* and *gin*. 4. Spirits from various vegetable substances. In Germany, a great quantity of spirit is distilled from potatoes, which contain about five per cent. of starch. Beet-root and carrots are used in the same way. The Swedes make a kind of spirit from the sap of the birch, and the maple and other trees are turned to a similar account. There are, besides, cherry-brandy, peach-brandy, cider-spirit, etc. 5. Arrack (q.v.) is the E. Indian name for all ardent spirits. See SPIRITS.

DISTILLA'TION, DESTRUCTIVE: process of heating vegetable and animal substances in retorts or similarly closed vessels, at a temperature sufficient to decompose the original substance, and obtain therefrom products possessing different properties from the material which yielded them. Examples of this process are, the heating of coal in gas-works at a red heat, when it resolves itself into coke, which is left in the retort, and into coal-gas, naphtha, tar, etc., which distil over into suitable receivers; the treatment of coal at and below a low red heat, when it yields much paraffine oil; the distillation of wood in close vessels, at a red heat, when charcoal is left in the vessel, and wood-vinegar, wood-spirit, tar, etc., pass over in vapor, and are condensed; and the heating of bones in similar retorts, when animal charcoal is left in the retort, and Dippel's animal oil distils over.

DISTILLED' WATER: condensed product obtained by the distillation of water. All natural waters, even rain-water, contain certain saline matters (common salt, etc.) in a state of solution, from which they can be completely freed only by the process of distillation. The characters of distilled water are, that it possesses a mawkish, insipid taste, without odor or color, and when evaporated to dryness in a vessel, it ought to leave no residue. For the other properties of distilled water, see WATER.

DISTILLED WATERS: term denoting the product obtained by distilling water with the parts of plants containing essential oils. Rose-water and lavender-water are familiar examples.

DISTINCT, a. *dĭs-tĭngkt'* [F. *distinct*—from L. *distinctus*, separated, marked off: It *distinto*]: not the same in number or kind; separate; clear; different; plain; obvious; not confused; in *OE.*, variegated; spotted. DISTINCT'LY, ad. *-lĭ*, not confusedly; clearly; plainly. DISTINCT'NESS, n. clearness; precision. DISTINC'TION, n. *-tĭngk'shŭn* [F.—L.]: a difference by which one thing is known from another; separation into parts; division; mark of difference or superiority; elevation of rank or character; eminence. DISTINC'TIVE, a. *-tĭv*, that marks distinction or difference; well-marked; specific. DISTINC'TIVELY, ad. *-lĭ*. DISTINC'TIVENESS, n. state of being distinctive.—SYN. of 'distinct': precise; different; marked; variegated; individual; well-defined;—of 'distinction': difference; variety; variation; contrast; diversity; contrariety; discrimination; preference; superiority; rank; note; separation.

DISTINGUISH, v. *dĭs-tĭng'gwĭsh* [OF. *distinguer*—from L. *distinguĕrĕ*, to mark a difference—from *dis*, asunder; *stinguo*, I scratch out: It. *distinguere*]: to indicate difference by some external mark; to separate or divide by some mark or quality; to perceive a difference by the senses; to make eminent or known; to signalize; to characterize; to find the difference. DISTIN'GUISHING, imp.: ADJ. constituting distinction or difference from other things. DISTIN'GUISHED, pp. *gwĭsht:* ADJ. separated from others by some marked difference; conspicuous; celebrated; illustrious; eminent. DISTIN'GUISHABLE, a. *-gwĭsh-ă-bl*, that may be known by some mark of difference; worthy of special regard. DISTIN'GUISHABLENESS, n. *-bl-nĕs*. DISTIN'GUISHABLY, ad. *-ă-blĭ*. DISTIN'GUISHER, n. one who or that which. DISTIN'GUISHINGLY, ad. *-lĭ*. DISTIN'GUISHMENT, n. distinction; observation of difference.—SYN. of 'distinguish': to discriminate; mark; honor; discern; perceive; recognize; separate;—of 'distinguished': prominent; marked; noted; famous; conspicuous; transcendent.

DISTOMA: see FLUKE.

DISTOMIDÆ: see TREMATODA.

DISTORT, v. *dĭs-tŏrt'* [L. *distortus*, distorted, deformed—from *dis*, asunder; *tortus*, twisted: It. *distorto:* F. *distors*]: to twist out of a natural or regular shape; to put out of its natural posture; to wrest from the true meaning: to pervert DISTORT'ING, imp. DISTORT'ED, pp. DISTOR'TION, n. *-tŏr'shŭn* [F.—L.]: the act of twisting or wresting out of a natural shape; some visible deformity, as a curved spine, squinting, etc.; a perversion of the true meaning of words. *Distortion*, in *perspective*, failure of the image formed by a lens on the focusing screen of a camera obscura to fulfil the conditions imposed by the rules of perspective in the delineation of natural objects. The effect of distortion is to render all straight lines, which do not pass through the centre of the lens, curvilinear, and also so to alter the relative proportions of objects in the picture as to violate the principles of perspective. Distortion, in the camera obscura, is generally produced by the eccentrical incidence of the oblique pencils.—Syn. of 'distort': to twist; twirl; wrest; deform; bend.

DISTRACT, v. *dĭs-trăkt'* [L. *distractus*, divided, perplexed—from *dis*, asunder; *tractus*, drawn or dragged]: to pull the attention or mind in different directions; to confuse; to perplex; to confound or harass; to derange or unsettle; to make mad; to turn or draw from any point or object. Distrac'ting, imp. Distrac'ted, pp.: Adj. disordered in mind; furious; mad. Distrac'ter, n. one who. Distrac'tion, n. *-trăk'shŭn* [F.—L.]: confusion from a crowding of objects on the mind; perplexity; perturbation; madness. Distrac'tedly, ad. *-lĭ*. Distrac'tedness, n. state of being distracted. Distrac'tive, a. *-tĭv*, causing perplexity. Distrac'tile, a. *-tĭl*, in *bot.*, applied to a connective which divides into two portions so that the anther-cells are far asunder, one being often absent: Adj. separating two parts to a distance from each other.—Syn. of 'distraction': derangement; raving; fury; furiousness; franticness; disorder; dissension; tumult; disturbance; embarrassment; agitation.

DISTRAIN, v *dĭs-trān'* [OF. *distraindre*—from mid. L. *distringĕrĕ*, to exercise severity upon, to compel or constrain a person to do something by the exaction of a pledge or by a fine—from L. *dis*, asunder; *stringo*, I strain, I draw tight]: to seize the person or goods for debt or rent; to make seizure. Distrain'ing, imp. Distrained', pp. *-trānd'*. Distrain'able, a. *-ă-bl*, liable to be distrained. Distraint', n. *-trānt'*, a seizing of goods for rent, etc. Distrain'or, n. *-trān'ĕr*, he who seizes goods for debt or for service.

DISTRAIT, a. *dĭs-trāt'* [F. *distrait*, distracted]: absent-minded; lost in thought: see Distraught.

DISTRAUGHT, pp. of v. *dĭs-trawt'* [L. *distractus*, pulled in different directions, dragged: F. *distrait*, distracted]: reduced to a state of perplexity and distraction; perplexed; confounded; made mad. *Note.*—Distraught is usually accepted as the pt. and pp. of *distract*, as *taught* of *teach*. It is rather a word of independent formation, and an example of an AS. termination, *ght*, engrafted on a Latin stem.

DISTREIN': see Distress.

DISTRESS, n. *dĭs-trĕs'* [F. *détresse*, misery, affliction: OF. *destrece*, oppression: mid. L. *districtĭō*, the judicial exaction of a fine or pledge, the pledge or fine exacted, subsequently termed a *distress;* connected with *distrain*]: extreme pain of body; anguish of mind; calamity; adversity; misfortune; poverty; destitution; a state of danger; the act of taking goods for rent, etc.: V. to afflict with pain; to pain; to grieve; to make miserable. Distres'sing, imp.: Adj. afflicting; oppressing with pain of mind or body. Distressed', pp. *-trĕst'*. Distress'ful, a. *-fûl*, bringing or inflicting distress; calamitous; proceeding from pain or anguish. Distress'fully, ad. *-lĭ.*—Syn. of 'distress, n.': affliction; suffering; pain; trouble; grief; sorrow; agony; misery; want; anguish; harassment; perplexity.

DISTRESS, in Law: remedy provided to enforce the payment of rent, taxes, and other duties, to exact compensation from owners for damages resulting from the trespasses of their cattle, and to compel the appearance at court of a party who could not be found by other processes. The action, known also as *distrain*, consists in taking property belonging to another as a pledge and keeping it till the obligation which it is intended to enforce is performed. The remedy is a very ancient one, and is believed to have prevailed among the Gothic nations of Europe from the dissolution of the Roman Empire. It has been on the statute books of England since the days of Magna Charta, and was thence introduced into the American colonies. In the United States its operations have been almost wholly confined to the collection of rents. Experience has shown that it is too harsh a remedy as far as the debtor is concerned, and that it discriminates in favor of the landlord and against other creditors. As a result it has been totally abolished in many states, and materially modified in the few that still retain it. In some states, like those of New England, it has been superseded by the law of attachment on *mesne* process (see Attachment, in Law), and in some southern states, while there are no statutory provisions on the subject, landlords have a lien otherwise on growing crops. The more general mode of procedure for the collection of rent, for which writs of D. were mainly obtained, is by means of a chattel mortgage given the landlord by the tenant, a demand on the sureties who, in some states, sign a lease with the tenant guaranteeing payment of rent should the tenant fail to do so, or the various actions authorized by the laws relating to landlords and tenants adopted by the different states. See Debts, Recovery of.

DISTRIBUTE, v. *dĭs-trĭb'ūt* [L. *distrĭbūtus*, distributed—from *dis*, asunder; *trĭbŭō*, I give or divide: It. *distribuire:* F. *distribuer*]: to divide among two or more; to deal out; to dispense or administer; to separate into classes or orders Distrib'uting, imp. Distrib'uted, pp. divided among a number; bestowed; in *logic*, applied to a term used in its full extent. Distrib'uter, n. one who. Distrib'utable, a. *-ū-tă-bl*, that may be distributed. Distribution, n. *dĭs'trĭ-bū'shŭn* [F.—L.]: the act of dividing among a number; a giving in parts or portions; a separation or division into parts or classes. Distrib'utive, a. *-trĭb'ū-tĭv*, that divides or assigns in portions: N. in *gram.*, a word containing the idea of distribution, as *each*, *one by one*, etc. Distrib'utively, ad. *-ū-tĭv-lĭ.*—Syn. of 'distribute': to disperse; apportion; allot; assign; divide; share; administer; dispose.

DISTRIBUTION OF SPECIES: see Geographical Distribution of Plants and Animals.

DISTRIBUTIONS, Statute of: laws providing for a division by order of an authorized court of the residue of the personal estate, after the payment of debts and charges, of a person dying intestate. The death of the owner vests the title to real estate in his or her heirs, and that to personal estate in the executor or administrator, from whom it reaches the beneficiaries through the process of distribution. The term distribution is also employed to denote the division of a residue of both real and personal property as well as the division of an estate according to the terms of a will. The manner of the distribution is governed by the law of the decedent's domicile. In Ala., Ark., Cal., Colo., Conn., Dak., Fla., Ga., Ill., Ind., Io., Kan., La , Mich., Minn., Miss., Mo., Mont., Neb., Nev., N. H., N. Mex., O., Penn., S. C., Tex., Utah, Vt., Wash., Wyo., and substantially in Ky., Me., and Wis., the statute rules are essentially the same as those for the descent of real estate, both where no distinction between ancestral and non-ancestral real estate is made, and where such distinction of non ancestral real estate is made. In Ariz., Del , D. C., Ida., Md., Mass., N. J., N. Y., Or., R. I., Tenn., Va., and W Va., the rules differ from the above as well as from each other, are very explicit, and quite voluminous.

DISTRICT, n. *dĭs'trĭkt* [F. *district;* OF. *destroict*—from mid. L. *districtum*, the right of exercising judicial authority, or the territory over which it was exercised—from *dis*, asunder; *strictus*, drawn together]: a limited extent of country; a part of a country or city defined by law or agreement; a part of a country not defined, as the iron districts. —SYN.: tract; region; quarter; division; province; country.

DISTRICT, CONGRESSIONAL: a division of a state according to its population, sufficient in size to entitle it to a representative in congress. The ratio of representation is established by congress every ten years, and is based on the total population as reported by the last preceding census. This is in accordance with the provisions of the U.S. constitution (art. 1, sec. 2), which further declares that the number of representatives shall not exceed one for every 30,000, and, lest some state might have less than the required population, that each state shall have at least one representative. The number of inhabitants required to constitute a C. D., under the census of 1870 was 131,425, and the total number of districts in the United States was 293; under the census of 1880 the ratio of representation was 151,911, and the number of districts 325. The last figures will hold till congress makes a new apportionment under the census of 1890. The action of the federal govt. ceases with the fixing of the rate, and each state establishes the boundaries of its own districts by an act of its legislature. There is, therefore, a decennial change in the number and frequently in the boundaries of the districts, and party politics have much to do, sometimes very unfairly, with mapping them out.

DISTRICT, STATE SENATORIAL: a division of a state according to its population, sufficient in size to entitle it to a representative in the upper house of its legislature. The boundaries are fixed by the legislature, each on a different basis of representation, but with the view of establishing an equality in such representation; and are subject to change by the same authority whenever the increase of population goes beyond the fixed ratio, or whenever the dominant political party deems it advantageous in order to secure an increased number of representatives, particularly when the election of a U. S senator is about devolving upon the legislature. Thus N. Y., with a population (1880) of 5,082,871, had 32 senatorial districts, and New York city with a population of 1,206,209 had, including Fordham, 25. The total assembly districts were four times the senatorial, or 128.

DISTRICT ATTORNEY OF THE UNITED STATES: lawyer commissioned by the pres. to act as attorney for the govt. in the various circuit and district courts of the country. His duty is to prosecute in his own district all delinquents for crimes and offenses cognizable under the authority of the United States, and all civil actions in which the United States shall be concerned, except in the supreme court. Should proceedings be taken against any local federal officer, such as a collector or other officer of the revenue service, for an action growing out of his official duty, the D. A. will appear for such defendant, unless the sec. of the treasury selects other counsel. He reports the general business of his office to the attorney-gen. of the United States, and on instituting any suit for the recovery of any fine, penalty, or forfeiture, is required to transmit immediately a statement of the case to the solicitor of the treasury, to whom he also forwards at the close of every term of court a particular statement of all cases decided therein in which the United States is concerned. He is paid by fees, and may engage in private practice while holding his federal appointment.

DISTRICT COURTS OF THE UNITED STATES: those ranking between the circuit and the territorial courts. The United States is divided (1888) into 58 federal judicial districts, to each of which a judge is appointed by the pres., except in some cases otherwise specially provided for. The judge must be a resident of the district to which he is appointed, and the records must be kept in the place where the court is held. The districts are variously constituted: Colo., Conn., Del., Ind., Kan., Ky., Me., Md., Mass., Minn., Miss., Neb., Nev., N. H., N. J., Or., R. I., S. C., Vt., and W. Va. have one district court each; Ala., Ark., Cal., Fla., Ga., Ill., Io., La., Mich., Mo., N. C., O., Penn., Tenn., Va., and Wis., have two; N. Y. and Tex., three; and the e. and middle districts of Tenn. but one. The judges are appointed for four years, and each receives a salary of $3,500 per annum, excepting those of the n. dist. of Ill. (Chicago), Md. (Baltimore), Mass. (Worcester) N. J. (Trenton), N. Y. (Utica, New York city, and Brooklyn), the s. dist. of O. (Cincinnati), and the e. dist. of Penn. (Philadelphia), who receive $4,000, the judge of the e. dist. of La. (New Orleans) $4,500, and of the n. dist. of Cal. (San Francisco), $5,000,

DISTRICT OF COLUMBIA: territory of the United States, which contains the seat of the federal govt., and over which it exercises exclusive jurisdiction, according to Art. I , Sec. 8, clause XVII. of the constitution.

Location and Area.—It is between lat. 38° 51′ and 39° n., and long. 76° 58′ and 77° 6′ w.; is 10 m. long from n.w. to s.e ; bounded on the n., n.w., e., and s.e. by Md., and w. and s.w. by the Potomac river and Va.; 200 m. from the ocean by the Potomac river and Chesapeake Bay; area 64 square miles.

Geology.—The surface is undulating. with numerous hills and fertile valleys, well wooded with oak, maple, chestnut, hickory, and other trees. It has a light sandy soil, is drained by the Potomac river, Rock and Anacostia creeks, and several brooks, and is of cretaceous formation, covered largely with drift. This range of drift begins on Long Island, embraces the lower part of New York, and widens as it extends southward from state to state till it reaches the Gulf of Mexico. The same formation which crosses Manhattan island from Hell Gate crops out in the D. C. in the hills of Georgetown. It shows, sectionally, sandstone, limestone, pebbles, clay, gravel, sand, and loam, and in several places deposits of marl underlaid by gneiss.

Climate.—The climate is moist, temperate and generally healthful; mean temperature of summer 75°, winter 35°, year 54°. The low flats of the Potomac have long been a source of malaria and fevers to the section bordering the river from the White House in Washington to Georgetown, and rendered that part of the capital unsafe for residence from June till Oct. At the present time (1888) an elaborate system of reclamation is being carried out by the federal govt., which it is expected will render the city one of the most healthful, as it is now one of the most beautiful, in the world. The average rainfall is 90 inches per year.

Agriculture.—Prior to 1800, the staple product was tobacco, the cultivation of which has been almost wholly abandoned for grain, corn, hay, fruit, and vegetables, all of which are produced in great abundance and readily sold in the markets of Washington and Georgetown. In 1880 there were 435 farms in the D. C., comprising 12,632 acres, valued at $3,632,403, and yielding products worth $514,441; value of farming implements and machinery $36,798, of live-stock $123,300. The chief products were: Indian corn, 29,750 bushels; oats, 7,440; rye, 3,704; wheat, 6,402; potatoes, Irish, 33,064, sweet, 23,347; hay, 3,759 tons; tobacco, 1,400 pounds; butter, 20,920; milk, 496,789 gallons; and various fruits valued at $12,064.

Manufactures.—The mechanical and manufacturing industries were represented (1880) by 971 establishments, using a capital of $5,552,526 employing 7,146 hands, paying $3,924,612 in wages, requiring materials valued at $5,365,400, and yielding products worth $11,882,316. The chief industry in value of product was printing and publishing, for which there were 28 establishments, $971,800 capital, 1,742 hands, $1,478,880 wages, $827,519 materials, and $2696,312 products. Corn and grist mill products ranked second with 9 establishments, $230,400 capital, 40 hands, $21,508 wages, $1,071,600 materials, and $1,172,375 products: and steel engraving third, with 2 establishments, $1,217,000 capital, 912 hands, $696,698 wages, $135,000 materials, and $879,166 products; all other industries yielded products valued at $600,000 and less.

Commerce.—Georgetown is a port of entry and has a considerable coasting trade, shipping about 600,000 tons of coal annually, beside tobacco, grain, and flour raised in w. Md.

Railways and Canals —The Baltimore and Potomac and branches of the Baltimore and Ohio railroads connect the D. C. with the e., n., and w. sections of country, and the Washington and Alexandria, and the Washington Va. Midland and Great Southern roads connect it with the general railroad system of the south. Water transportation is furnished by the Chesapeake and Ohio canal which crosses the Potomac at Georgetown, and by the Potomac itself, which is navigable for large vessels as far as the Washington navy yard on the e. branch, and to the head of tidewater at Georgetown.

Religion.—In 1885 there were 172 churches in the D. C. holding property rated at over $5,000,000, of which 54 were Meth. Episc., 40 Bapt., 22 Prot. Episc., 18 Presb., 13 Rom. Cath, 10 Lutheran, 4 Congl., 2 Jewish, and 1 each Christian Disciples, Unitarian, German Ref., Friends, New Jerusalem, and Universalist.

Education.—The public schools had an enrolment, 1885–6, of 32,336 pupils, out of a population of 50,919 children of the school age (6–17 years), with average daily attendance of 24,021. There were 56 male and 514 female teachers, who received salaries aggregating $424,729; the total cost of public education was $565,377, one half of which was appropriated by the federal govt., and the other half raised by taxation. The estimated value of all public school property was $1,395,708. There were 5 universities and colleges, with grounds, buildings, and appliances worth $400,000, and $175,000 in productive funds; 4 medical colleges with property of all kinds worth $104,800; and 3 deaf and dumb institutions with 19 teachers, 134 pupils, 3,400 vols. in libraries, and with grounds, buildings, and appliances worth $700,000. The higher institutions included Georgetown Univ., the oldest Rom. Cath. college in America founded 1789; Columbian Univ., established 1814 as a Bapt. college; Howard Univ., incorporated 1867 for the education of freedmen and since unrestricted as to race or sex; and the National Deaf-Mute College, the only collegiate institution for deaf mutes in the world. There were also 54 public libraries, of 1,000 vols. and upward, containing a total of 1,202,818 volumes.

Public Charities.—The permanent institutions of the federal govt., as well as those of the D. C. proper, embrace the U. S. Soldiers' and Sailors' Orphan Asylum, National Soldiers' Home, Children's Hospital, Freedmen's Hospital, Providence Hospital, Columbia Hospital for Women, U.S. Hospital for the Insane, Reform School and Farm for

Boys, Washington Asylum for vagrants, sick and destitute persons, and petty criminals, U. S. Naval Hospital, Garfield Memorial Hospital, Louise Home for destitute gentlewomen, and Hospital for Foundlings. There are in addition many denominational or private institutions of high repute.

Finances and Banking.—The public debt of the D. C. (1880) amounted to $22,675,459, a large part of which was incurred in the vast street improvements in Washington carried out by Gov. Shepherd and the board of public works under the,territorial form of govt. 1871–74. Excluding the value of U. S. property, estimated at $110,000,000, the assessed valuation of real estate was $87,980,356, personal property $11,421,431: total $99,401,787. The tax rate was 1½ per cent.; amount raised $1,469,254. One half the total expenditures of the D. C. is paid by the federal govt., the other half is raised by taxation on real estate. In 1888 there were 8 national banks with aggregate capital, $1,827,000, and 1 state and 10 private banks, cap. not reported, and 1 safe deposit company, cap. $200,000, beside a number of fire and life insurance companies.

History —The region of the Potomac river was originally a favorite camping and fishing ground of several Indian tribes who lived in its vicinity, and was called by them the 'River of Swans.' As early as 1660 a portion of the tract was purchased by an Englishman named Pope, who named the whole tract Rome, a stream running through it (the site of a portion of Penn. Ave., Washington) the Tiber, and the principal eminence, on which the capitol now stands, Capitoline Hill, and signed all his letters and documents 'the Pope of Rome.' Some 30 years prior to this the Potomac had been explored as far as Little Falls, beyond the limits of the D. C., by an Indian trader named William Fleet, with whom Leonard Calvert treated, 1634. The Colonial Congress for a number of years following its organization, had no permanent seat. (See CONGRESS, UNITED STATES.) The session of 1783 was begun in Philadelphia, but being disturbed by a riotous demand of the soldiers for their overdue pay, congress adjourned first to Princeton, thence to Annapolis, and subsequently to New York. The question of a permanent seat of govt., to be entirely under federal authority, which had been broached several times, was then considered to be urgent; and when the proposed federal constitution was being drafted (1787) a clause was inserted in Art. I., sec. 8 (q.v.) establishing the power of congress to exercise exclusive legislation over such a district as might subsequently be ceded to the govt by particular states for a seat of the govt. of the United States. As soon as the intention of congress to select a site was known, various states made offers of the 10 m. square, specified in the constitution, and prolonged discussions followed. The desire of the north and the south each to hold the seat of govt. was carried into other political questians of the day. Alexander Hamilton was anxious that the federal govt. should assume the state debts, and opposed the location of the govt. further south than Philadelphia; while Lee and White of Va. opposed his debt-paying scheme and favored the establishment of the national capital on the banks of the Potomac. A dead-lock resulted. Both parties remained firm. The capital project seemed doomed to indefinite delay. In this emergency Thomas Jefferson brought Hamilton and Morris on the one side, and Lee and White on the other, together at a private dinner, and arranged a compromise by which it was agreed that the votes of Lee and White should be given for Hamilton's debt-paying scheme, in return for the influence of Hamilton and Morris in favor of the establishment of the capital on the banks of the Potomac. The state of Md. then ceded 60 sq. m. on one side of the river and the state of Va. 40 sq. m. on the other, to constitute the federal district. The site of the national capital was selected 1790, and the first stone to mark the boundaries of the D. C. was set at Jones's Point, below Alexandria, 1791, Apr. 15. The commissioners appointed to lay out the district agreed that it should be called 'The Territory of Columbia,' and the federal city 'The City of Washington.' The city was laid out in accordance with the plans of Maj. L'Enfant, a French officer and engineer who had been wounded at Savannah and who was one of Washington's favorite officers. Public buildings were erected, and official possession was taken 1800, when congress removed from Philadelphia and began holding its sessions there. Subsequently the whole territory was styled the D. C., in memory of Christopher Columbus. In 1846 the area of 100 sq. m. was reduced to 64 sq. m. by retrocession to Va. of the section previously included within the bounds of that state.

Government.—Previous to 1871 legislative power was exercised directly by congress. An act adopted that year established a territorial form of govt., and gave the citizens representation in congress for the first time. The charters of Georgetown, incorporated 1789, Dec. 25, and Washington, incorporated 1802, May 3, were repealed by the act, though both were allowed to bear the name of city, and the corporations of the cities as well as that of Washington co. were merged into the new govt. Alexander R. Shepherd became pres. of the Citizens' Reform Assoc. 1870, vice-pres. of the board of public works under the new govt. 1871, and gov. of the district 1873. In 1874 the territorial govt was abolished, and since then all the public affairs of the district have been managed by a board of three commissioners acting directly under the legislation of congress. The D. C. has a supreme court with 6 judges, and a police court with one judge. The citizens have no representation in congress, nor a vote either in district or national affairs.

Population.—(1860) 75,080; (1870) 131,700; (1880) 177,624; (1885) 203,459. See WASHINGTON, D. C.

DISTRICTS, MILITARY: regions into which the United Kingdom is divided for military purposes, to facilitate command and organization: they now number 16; of which 9 are in England, four in Ireland, one in Scotland, two in the Channel Islands. See DIVISIONS, MILITARY.

DISTRINGAS, n. *dĭs-trĭng′găs* [L., you may distrain; 2nd pers. sing. pres. subj. of *distringo*, I distrain]: in *law*, a process commanding the sheriff to distrain the defendant by taking his goods and the profits of his lands.

DISTRUST, n. *dĭs-trŭst′* [L. *dis*, not, and *trust*]: doubt or suspicion; want of confidence, faith, or reliance: V. to doubt or suspect; not to confide in or rely on. DISTRUST′ING, imp. DISTRUST′ED, pp. DISTRUS′TER, n. one who. DISTRUST′FUL, a. *-fûl*, suspicious; apt to distrust. DISTRUST′FULLY, ad. *-lĭ*. DISTRUST′FULNESS, n. DISTRUST′INGLY, ad. *-lĭ*. DISTRUST′LESS, a. free from distrust or suspicion.

DISTURB, v. *dĭs-tėrb′* [OF. *destourber*—from L. *disturbārĕ*, to throw into disorder—from *dis*, asunder; *turbo*, I trouble, I disorder: It. *disturbare*]: to throw into disorder; to stir; to discompose; to ruffle; to agitate; to move from a state of rest, or from a regular order; to interrupt. DISTURB′ING, imp. DISTURBED′, pp. *-tėrbd′*. DISTUR′BER, n. one who. DISTUR′BANCE, n. *-tėr′băns*, confusion; disorder; a stirring up or excitement; tumult; a disquieting or hindering from the peaceable enjoyment of, as of a right.—SYN. of ‘disturb’: to perplex; trouble; incommode; move; hinder; disorder; disquiet; molest;—of ‘disturbance’: brawl; tumult; agitation; derangement; perturbation; commotion; disquiet; excitement; uneasiness.

DISTYLE, n. *dĭs′tīl* [Gr. *dis*, twice; *stulos*, a pillar]: a portico of two columns.

DISULPHIDE, n. *dī-sŭl′fīd* [pref. *di*, twice, twofold, and Eng. *sulphide* (q.v.)]: compounds in which two atoms of sulphur are united to another element or radical; called also bisulphides.

DISUNION, n. *dĭs-ū′nĭ-ŭn* or *dĭs-ūn′yŭn* [L. *dis*, asunder, and *union*: F. *désunion*]: want of concord or agreement; state of not being united; separation; contention. DISUN′IONIST, n. *-ĭst*, a promoter of disunion.

DISUNITE, v. *dĭs′ū-nīt′* [L. *dis*, asunder, and *unite*]: to separate; to disjoin; to part; to fall asunder; to become separate. DIS′UNI′TING, imp. DIS′UNI′TED, pp. DISU′NITY, n. *-ū′nĭ-tĭ*, a state of separation.

DISUSE, n. *dĭs-ūs′* [L. *dis*, not, and *use*]: want or neglect of use; cessation of a custom; cessation of practice or exercise: V. *dĭs-ūz′*, to cease to use; to neglect to practice. DISU′SING, imp. DISUSED′, pp. *-ūzd′*. DISUSAGE, n. *dĭs-ū′zāj*, gradual cessation of use or custom; neglect of use or practice.

DISVALUE, v. *dĭs-văl′ū* [L. *dis*, and *value*]: to undervalue; to set a low price upon.

DISVEL′LOPED, or DEVEL′OPED, in Heraldry: flying; applied to the unfolded colors of a regiment or army.

DISVOUCH, v. *dĭs-vowch′* [L. *dis*, not, and *vouch*]: in *OE.*, to contradict; to destroy the credit of.

DIT, n. *dĭt* [F. *dit*, a saying (see DITTY)]: in *OE.*, a poem; a tune; a ditty; a theme.

DITA, n. [a native word]: a tree of the Dogbane family (*Apocynaceæ*). It is widely diffused throughout India and the Malayan Islands. It is stiff-branched, attaining a height of 50 ft. to 80 ft., with a furrowed trunk; it has oblong leaves, 3 in. to 6 in. long, and 2 in. to 4 in. wide, produced in fours round the branches. The bark is intensely bitter, and is used by the natives in bowel complaints, and its milky juice as a kind of gutta-percha.

DITCH, n. *dĭch* [Dan. *dige*, a ditch, a bank: F. *digue*, a jetty, a bank. a corruption of DIKE, which see]: a trench dug in the ground; a moat; any long marshy channel for water: V. to trench; to dig a drain; to form ditches. **DITCH'ING**, imp. **DITCHED**, pp. *dĭcht*, surrounded with a ditch or moat. **DITCH'ER**, n. one who makes or repairs ditches. **DITCH BUR**, n. *Xanthium strumarium*, plant of the composite order. **DITCH-FERN**, n. *Osmunda regalis*. **DITCH-REED**, n. *Phragmites communis*.

DITCH, in Agriculture: open trench cut in the soil to carry off surplus water. It is the oldest and simplest means of draining land, and, though largely superseded by other methods, is still extensively employed. See DRAINAGE. It is specially serviceable on new lands which the owners have had neither time nor capital permanently to improve. Temporary ditches are often made at the ends of fields, to carry off the water which accumulates in the open or 'dead' furrows, and in other places to prevent flooding by heavy rains. A main ditch is made to carry off the water which flows from a series of underground drains; and on very flat land, which cannot be readily drained, large ditches are cut merely to hold the water which would otherwise be distributed through the soil. The banks should always be cut quite sloping in order to prevent caving in by the action of rain and frost. In England the ditch, in connection with the hedge, is extensively used for fencing as well as draining land. The ditch is objectionable because it occupies considerable land, renders cultivation in its vicinity inconvenient, is liable to fill up, is not fully efficient, and by holding stagnant water tends to promote disease.

DITCH, in Fortfication: one of the most important of the defense-works of a fortified place. It is a broad and deep trench, that may either be kept dry or filled with water; in practice, it is generally dry. In permanent works, such as the regular fortifications of a town, the *rampart* and the *ditch* are the most important; the former being inside the latter, and formed mainly of the earth excavated from it. The ditch is often 120 ft wide, 12 ft. deep below the natural level of the ground, and 24 ft. beneath the parapet of the rampart. See COVERT WAY.

DITETRAHEDRAL, a. *dī-tĕt-ra-hē'dral* [Gr. *dis*, twice, twofold, and Eng. *tetrahedral* (q.v.)]: having the form of a tetrahedral prism with dihedral summits.

DITHEISM, n. *dī'thē-ĭzm* [Gr. *dis*, twice; *theos*, a god]: the doctrine of those who maintain the existence of two gods, one good, the other evil. **DI'THEIST**, n. *-ĭst*, one who. **DI'-**

THEIS'TIC, a. *-ĭs'tĭk*, or DI'THEIS'TICAL, a. *-tĭ-kăl*, pertaining to.

DITHYRAMBIC, n. *dĭth'ĭ-răm'bĭk*, also DITH'YRAMB, n. *-ĭ-răm* and DITHYRAMBUS [L. *dithyram'bus;* Gr. *dithuram'bos*, a hymn to Bacchus]: originally a surname of Bacchus, of uncertain derivation and meaning; subsequently applied to a species of lyric poetry cultivated particularly at Athens, characterized by loftiness and vehemence of style, which, later, degenerated into bombast and extravagance. The D. was originally a passionate hymn in honor of Bacchus, sung by one or more revellers to the music of a flute; but Arion (q.v.) invented for it a regular choral or antistrophic form. It is this form which is generally spoken of as the dithyramb. It subsequently received various alterations, but no specimens of it have survived. The term is now applied to a poem written in a wild irregular strain. DITHYRAMBIC, a. wild; enthusiastic.

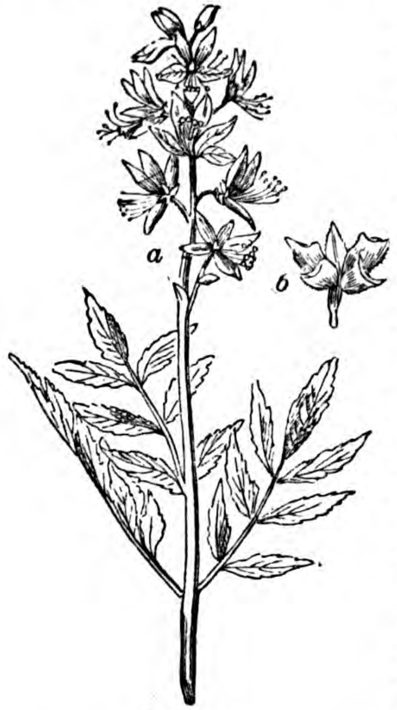
DITMARSH, *dĭt'mârsh*, NORTH and SOUTH (*Norder* and *Süder Dithmarschen*): western dist. of the German duchy of Holstein, between the Eider and the Elbe; entire area, 500 sq. m.; pop. 75,000. In old German times, D. formed a part of Saxony beyond the Elbe, and is worthy of special notice, because the inhabitants have preserved to the present day the peculiarities of antiquity. It has its own collection of laws, known as the *Ditmarsh Landbook*, which originated 1321 from 48 judges; was altered 1447, first printed 1497, amended 1567, and finally enjoined anew 1711. Whatever authentic notices, traditional and otherwise, we possess of D., we owe to Joh. Adolfi (1559–1629), whose *Chronik des Landes D.* (Ditmarsh Chronicle), written in the Lower Saxon dialect, was published in the original text, with 23 dissertations by Dahlman (Kiel 1827).

DITONE, n. *dī'tōn* [Gr. *dis*, twice; *tŏnos*, a tone]: in *music*, an interval of two tones.

DITRICHOTOMOUS, a. *dī-trĭ-kŏt'o-mŭs* [Gr. *dis*, twice, twofold, and Eng. *trichotomous* (q.v.)]: divided into twos and threes; applied to a leaf or stem, continually branching off into double or treble ramifications.

DITRIGLYPH, n. *dī-trĭg'lĭf* [Gr. *dis*, twice, twofold, and Eng. *triglyph* (q.v.)]: an interval between two columns, admitting two triglyphs in the entablature. This arrangement of the intercolumniations was peculiar to the Doric order.

DITTANY, n. *dĭt'tă-nĭ* [OF. *dictame*—from L. *dictamnus:* Gr. *diktamnos*], (*Dictamnus*): genus of plants of the nat. ord. *Rutaceæ*, having a short 5-partite calyx, five somewhat unequal petals, ten stamens, and five 1–3-seeded follicular capsules cohering at the base. The COMMON D., also called BASTARD D., or FRAXINELLA (*D. albus*),—native of sunny mountains and rocks and dry mountain-forests of the south of Europe, especially in calcareous soils—is generally cultivated as a garden-flower. It is a perennial, with stem 1½–3 ft. high, perfectly unbranched, bearing a few pinnated leaves, which have 3–5 pair of leaflets and an odd one, and terminating in a beautiful erect raceme of 10–20 flowers. The flowers are of fine rose color, with darker veins, rarely white. The plant diffuses a powerful fragrance resembling lemon-thyme, from its numerous oil-glands when in flower, and during dry hot weather exhales such a quantity of volatile oil, that its sudden combustion makes a slight flash when a candle is brought near it on a warm summer evening. The root is thick, white, and very bitter, and was formerly in high repute in medicine as a tonic stimulant, but is now neglected. —D. of Crete, used as a febrifuge, is a very different plant (*Origanum Dictamnus*) a kind of marjoram (q.v.).



Dittany:
a, top of stem, with leaves and flowers: *b*, fruit.

DITTAY, *dĭt'tā:* technical term in the criminal law of Scotland, now little used, signifying the ground of indictment or substance of the charge.

DITTEEAH: see DUTTEEAH.

DITTIED: see under DITTY.

DITTO, ad. *dĭt'tō* [It. *detto* or *ditto,* word, anything said—from L. *dictus,* said—usually contracted *do.*]: the same as above; what has been said before; the same.

DITTOLOGY, n. *dĭt-tŏl'o-jĭ* [Gr. *dissologia, dittologia,* a repetition of words—from *dissos,* double; *logos,* a word]: twofold or double reading or interpretation of a text.

DITTY, n. *dĭt'tĭ* [OF. *dichté* or *ditté,* recitation of an adventure, a story, or a poem; F. *dit,* or *dicton,* a saying, a maxim—from L. *dictum,* a word]: a song; a little poem intended to be sung. DITTIED, a. *dĭt'tĭd,* in the form of a ditty; sung; adapted to music.

DIU, *dē-ô':* seaport, at the e. extremity of an island of the same name off the s. coast of Guzerat, in Hindustan. It is well fortified, having a moderately safe harbor, with a general depth of three or four fathoms. The anchorage is said to be gradually becoming shallower. The place has been in possession of the Portuguese since 1515; but, from its detached and isolated position, its trade is of little consequence. Pop. abt. 11,000.

DIURESIS, n. *dī'ū-rē'sĭs* [Gr. *diourēsis*—from *dia,* through, and *ouron,* urine; *diouretĭkos,* having the power of provoking urine]: an increased or excessive flow of urine. Di'uret'ic, a. *-rĕt'ĭk,* having the power to promote the flow of urine: N. a medicine that increases the secretion or discharge of urine: such medicines are much employed in dropsies, as well as in a variety of other diseases. The principal diuretics are the salts of potash, especially the nitrate, acetate, and bitartrate (cream of tartar); squill, in powder, vinegar, or syrup; digitalis or foxglove, in powder or infusion; the decoction or infusion of broom-tops (*scoparium*); the decoction of the American winter-green or pyrola; the alcohols and ethers, with most of the volatile oils, especially that of juniper, as in gin; the berries of the common elder; the tincture of cantharides or Spanish flies; turpentine, etc. The last named (from the alcohols onward in the above enumeration) are more or less irritating in their effects on the urinary organs, and should not be used without medical advice as to the requirements of the particular case. Cream of tartar and the broom-decoction form one of the safest and best diuretic mixtures which can be employed for domestic purposes; or cream of tartar may be given alone, either dissolved in hot water, and allowed to cool, or in substance with syrup.

DIURIDÆ, n. *dī-ūr'ĭ-dē* [Gr. *dis*, twice; *oura*, a tail—in allusion to the lateral lobes of the labellum]: family of orchids, tribe *Neotteæ*. Diur'is, n. *-ĭs*, genus of Australian and New Zealand orchids, type of the family *Diuridæ*.

DIUR'NA: see Lepidoptera.

DIURNAL, *dī-ėr'năl* [F. *diurnal*—from L. *diurnus*, daily—from *dĭēs*, a day: It. *diurno*]: pertaining to a day; daily; applied to animals that are active during the day: N. in *OE.*, a journal; a day-book. Diur'nally, ad. *-lĭ*.

DIVAGATION, n. *dī-va-gā'shŭn* [L. *divagatus*, pp. of *divagor*, I wander about—from *dis*, away, apart; *vagor*, I wander]: a wandering or going astray; a deviation; a digression.

DIVALENT, a. *dĭv'ă-lĕnt* [Gr. *dis*, twice: L. *valens* or *valen'tem*, strong]: in *chem.*, applied to atoms which have two combining units, and therefore require two monad atoms for saturation; bi-equivalent. Divalency, n. *dĭ-văl'-ĕn-sĭ*, the state of having two units of any standard.

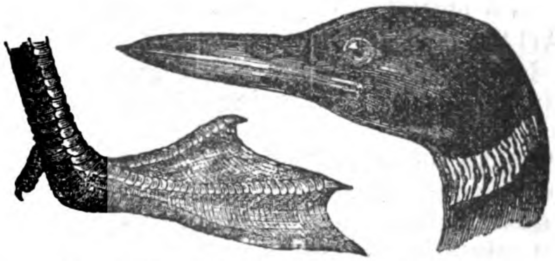
DIVAN, n. *dĭ-văn'* [Pers. *diwan*, a tribunal, a collection of writings: It. *divano:* F. *divin:* Ar. *diouânn*]: in Persia, a muster-roll, a register of payments or account; a collection of poems or songs by one and the same author: Goethe uses it in this sense in his *Westöstliche Divan.* In Turkey, an administrative board; the highest council of state at Constantinople is called *Divâni humäjûn,* most illustrious divan; thence, a provincial council, a court of justice; thence a hall, or reception room in palaces and the private houses of the richer citizens: along the walls of the room are ranged low sofas, covered with rich carpets, and provided with many cushions. Hence in western Europe and the United States, the name divan has been applied to a kind of sofa.

DIVARICATE, v. *dī-văr'ĭ-kāt* [L. *divarĭcātus*, spread asunder—from *dis*, asunder; *vārĭcātus*, spread apart, as the legs]: to fork; to part into two branches. **DIVAR'ICATING**, imp.: ADJ. in *bot.*, coming off from the stem at a very wide and obtuse angle; straggling. **DIVAR'ICATED**, pp. **DIVARICA'TION**, n. *-kā'shŭn*, a forking; a separation into two branches.

DIVE, v. *dīv* [Dut. *duipen*, to duck the head: Icel. *dyfa*, to dive: AS. *dufian*, to plunge in water: Dan. *duve*, to pitch, as a ship]: to sink; to plunge into water head foremost; to thrust the body into water; to go deep into any subject: **DI'VING**, imp. **DIVED**, pp. *dīvd*. **DI'VER**, n. one who dives into water; a kind of sea-bird. See DIVING. DIVING-BELL. **DIVING-SPIDER**, common water spider: see SPIDER. **DIVING-STONE**, n. name given to a variety of jasper. **DIVE-DAPPER**: same as didapper (q.v.)

DIV'EL ON THE NECK: instrument of torture used against the Lollards. It is thus described by Fox, in his *Acts and Monuments:* 'Certain strait irons called the divel on his neck being after an horrible sort devised, straitening and winching the neck of a man with his legs together, in such sort as the more he stirreth in it, the straiter it presseth him, so that within three or four hours, it breaketh and crusheth a man's back and body in pieces'—Cowel's *Interpreter*.

DI'VER, or LOON (*Colymbus*): genus of birds of the family *Colymbidæ* (q.v.), having a strong, straight, rather compressed pointed bill, about as long as the head; a short and rounded tail; short wings, thin compressed legs placed very far back, and the toes completely webbed. They fly well, but are particularly expert in diving. They prey on fish, which they pursue under water, making as much use of their wings as of their legs and webbed feet in their subaqueous progression. They are scarcely capable, however, of walking on land, and the name *Loon* is supposed to refer to this incapacity, and to be from the same root with *lame*. The GREAT NORTHERN D., or LOON, called also the IMMER or EMBER GOOSE (*C. glacialis*), is a bird about 33 inches long, with much beauty of plumage; the upper parts black, spotted with white; the head black, with tints of green and blue; the belly white. It is a winter visitant of the British coasts, even to the furthest south, and is occa-



Head and Foot of Great Northern Diver.

sionally seen in inland districts; is found in winter in most parts of Europe, the north of Asia, and N. America, as far s. as Texas, but it breeds chiefly in northern regions, as Labrador, Iceland, and Spitzbergen. It is not exclusively marine, being seen on large rivers, and making its nest on the shores of fresh-water lakes. Its cry is very peculiar and wild, has been likened to the howl of a wolf, and is in some countries superstitiously regarded as ominous of evil. It is easily tamed, and becomes very familiar.—The BLACK-THROATED D. (*C. arcticus*) is another northern bird, of similarly wide geographic distribution, but much smaller size, being only about 26 inches in length. The RED-THROATED D. (*C. septentrionalis*) also is found in all the northern parts of the world, is more common in Britain than either of the other species, and is the bird generally called Loon on the British coasts. In size it scarcely equals the Black-throated Diver. Its back is brownish-black, the belly white, the throat red. The flesh of all the Divers is dark, tough, and unpalatable.—The name D. is sometimes extended to all the *Colymbidæ* (q.v.), sometimes to all the *Brachypteræ* (q.v.).

Great Northern Diver (*Colymbis glacialis*).

DIVERB, n. *dī'vĕrb* [L. *diverbium*, a conversation of two, a dialogue—from *dis*, twice; *verbum*, a word]: an antithetical proverb or saying, in which the parts or members are contrasted or opposed. 'England is a paradise for women, a hell for horses; Italy a paradise for horses, a hell for women; as the diverb goes.'—*Burton: Anat. of Melancholy*, p. 601.

DIVERGE, v. *dĭ-vĕrj'* [F. *diverger*—from L. *divergĕrĕ*—from L. *dis*, asunder; *vergo*, I incline: It. *divergere*, to diverge]: to spread out from one point; to radiate from one point and recede from each other, as straight lines from the centre of a circle, or rays of light from a luminous body; opposite to *converge* **Diver′ging**, imp. **Diverged′**, pp. *-vėrjd′*. **Diver′gent**, a. *-vėr′jĕnt* [F.—L.]: departing or receding from each other; in *bot.*, radiating or spreading outwards from a common centre (see **Convergent**). **Diver′gence**, n. *-jĕns* [F.—L.]: a receding from each other. **Diver′gingly**, ad. *lĭ*.

DIVERS, a. *dī′vėrz* [F. *divers*, divers, unlike—from L. *diversus*, apart from, different, various—from *dis*, asunder; *versus*, turned]: various; sundry; different; several. **Diverse**, a. *dī-vėrs′*, or *dī′-* [L. *diversus*]: different; various, unlike; more than one. **Diverse′ly**, ad. *-lĭ*, or *dī′-*, in different ways. **Diversity**, n. *dĭ-vėr′sĭ-tĭ* [F. *diversité*—from L. *diversĭtātem*]: difference; unlikeness; variety; distinct being; not identity. **Diversify**, v. *dĭ-vėr′sĭ-fī* [L. *facĭō*, I make]: to make different or various; to give variety to. **Diver′sifying**, imp. **Diver′sified**, pp. *-fīd*. **Diversifier**, n. *-fī-ėr*, one who, or that which. **Diver′sifica′tion**, n. *-kā′shŭn*, variation; the act of making various, or of changing forms; change; alteration. **Diver′sifi′able**, a. *-fī′ă-bl*, that may be diversified or varied.

DIVERSIFLOROUS, a. *dĭ-vėrs-ĭ-flōr′ŭs* [L. *diversus*, different, diverse; *flos*, a flower]: term applied to a plant or inflorescence which bears flowers of two or more kinds.

DIVERSION: see under **Divert**.

DIVERSIVOLENT, a. *dĭ-vėr-sĭv′o-lent* [L. *diversus*, different, diverse; *volens*, wishing, p. pr. of *volo*, I wish]: wishing for, or fond of, differences or strife.

DIVERT, v. *dĭ-vėrt′* [F. *divertir*—from L *divertĕrĕ*, to turn one's self away from—from *dis*, asunder; *verto*, I turn; *versus*, turned: It. *divertere*]: to turn aside from business to pleasure; to turn off from any particular direction to another; to turn aside, as a stream; to amuse; to entertain; in *OE.*, to destroy; to subvert. **Diver′ting**, imp.: **Adj.** giving amusement to. **Diver′ted**, pp. **Diver′ter**, n. one who. **Diver′tingly**, ad. *-lĭ*. **Diver′sion**, n. *-vėr′shŭn* [F.—L.]: the act of turning aside; amusement; that which diverts; recreation; sport; the act of drawing the attention of an enemy from the real point of attack.—**Syn.** of 'diversion': entertainment; pastime; solace; play; games; relaxation; an attack, alarm, or feint;—of 'divert': to please; gratify; exhilarate; delight.

DIVERTICULUM, n. *dī-vėr-tĭk′ū-lŭm*, **Divertic′ula**, n. plu. *-ū-lă* [L. *divertic′ulum*, a by-way—from *diverto*, I turn aside]: in *anat.*, a cul-de sac, or blind lateral tube given off from a main tube.

DIVERTISEMENT, or **Divertissement**, n. *dĭ-vėr′tĭz-mâng*, also **Divertimento** [F. *divertissement*—from *divertir*, to divert]: species of musical composition consisting of different movements, arranged in an easy style for one or more instruments, but not so elaborately wrought out as the sonata, or other more regular compositions. The D. has generally no fixed character, being merely a musical picture without any attempt at artistic effect, or other aim than to please the ear, and may be said to take its place between the *Etude* and the *Capriccioso*. It was greatly in vogue during the last half of the 18th c.; until then, the word had never been used to denote a musical composition. The name is now applied to an entertainment, of dances and songs, introduced between the acts of an opera, or play, as a diversion during the pause: it was thus used in France much earlier than in Italy or Germany.

DIVES, n. *dī'vēz* [L. *divēs*, rich, after the rich man in the parable]: a rich, miserly sinner. DIVS or DEEVS, n. plu. *dēvz*, demons of the Persian mythology: see DEVIL.

DIVEST, v. *dĭ-vĕst'* [It. *divestire;* OF. *dévestir;* F. *dévêtir*, to undress—from L. *dis*, asunder; *vestis*, a garment]: to strip, as of clothes, arms, etc.; to deprive of; to dispossess. DIVES'TING, imp. DIVES'TED, pp. DIVES'TURE, n. *-tūr*, the act of stripping or depriving: also in *OE.*, DEVEST, which see.

DIVIDE, v. *dĭ-vīd'* [L. and It. *dividĕrĕ*, to part asunder, to distribute· Sp. *dividir*, to divide]: to separate or part; to part a thing into two or more pieces; to keep apart; to distribute; to give in shares; to part or open; to cleave; to separate for the purpose of voting, as in parliament. DIVI'DING, imp. DIVI'DED, pp. DIVI'DER, n. one who or that which divides. DIVI'DERS, n. plu. compasses. DIVI'DINGLY, ad. *-lĭ.* DIVI'DABLE, a. *-vī'dă-bl*, that may be divided. DIVIDANT, a. *dĭ-vī'dănt*, in *OE.*, separate; different. DIVIDUAL, a. *dĭ-vĭd'ū-ăl* [L. *divĭdŭŭs*, that can be divided]: in *OE.*, that can be shared or partaken of in common with others; divided.—SYN. of 'divide': to separate; detach; disjoin; disconnect; part; sever; sunder; share; apportion; disunite; graduate; open.

DIVIDEND, n. *dĭv'ĭ-dĕnd* [F. *dividende*—from L. *dividenda*, requiring to be severed or cut off: It. *dividenda*, a dividend, a share (see DIVIDE)]: a part or share of the profits or gains of a public company engaged in business of any kind, as a bank or railway, which may be available for distribution among the proprietors; usually declared half-yearly, by order of the directors: occasionally the dividends do not exhaust the profits, and the surplus is allowed to accumulate till it is paid to the shareholders as an extra dividend or *bonus*. D. is also the interest payable on any portion of the national debt or other stock: the part or share due to each creditor from funds realized from a bankrupt's effects, or from the payment of a composition: in *arith.*, the number to be divided.

DIVID'ING ENGINE: see GRADUATION.

DIVIDIVI, *dĭ'vĭ-dĭ'vĭ*, or LIBIDIBI, *lĭ'bĭ-dĭ'bĭ:* curved pods of *Cæsalpinia coriaria* (see CÆSALPINIA), a tree on the coasts of Curaçoa, Carthagena, and other parts of tropical America. They have been long used there for tanning, but have recently acquired importance as an article of commerce. A considerable quantity is now annually exported to Britain. It is one of the most astringent substances known.

DIVINA'TION: act of discovering the hidden, particularly the future, in a supernatural way. Men have at all times set their own imaginations above the causes of nature, and by a curious subjective process, have endeavored to draw out of themselves what they should have sought only by study of the laws of nature. Thus, have been instituted systems of superstition among almost all nations, which scientific discovery and rational Christianity have not wholly eradicated: so that, even among comparatively enlightened peoples, there remains a deep substratum of this old-world feeling. A special use of the term D. is to denote fortune-telling or sorcery (middle-age Latin *sortiarius*, one who reads the future by means of lots or *sortes*). It was a maxim with the nations of antiquity, that if there are gods, they care for men; and if they care for men, they will send them signs of the destiny which they appoint for men. This, with some variations, has been a universal sentiment in all ages and countries. But it was the first step in this journey which presented the whole difficulty. How was man to know the appointments of the gods? The variety of answers to this question constitutes the history of divination. Thus, among the Greeks, the word for D. was *mantikē*, which signified more than the Latin *divinatio;* inasmuch as it was applied to any means by which the Deity discloses himself to man, while the Latin word denoted more the power which man is supposed to possess of discovering the future. With the Greeks, the seer was passive; with the Romans, he was active: see SEER: ORACLE. Astrology (q.v.) was a favorite method of D. among the ancient Chaldeans, as well as in the middle ages. *Auguries* and *auspices*—both words derived from *avis*, a bird—were systems brought to perfection by the Romans as means of knowing the will of the gods: see AUGURIES and AUSPICES. The sacrifice of beasts, besides, the casting of the horoscope, and the observing of the constellations, all were favorite modes of guessing at the future practiced by the Romans. The Araucanians, a warlike nation of S. America, seem to have placed as implicit faith in the divination of birds as did the Romans, and their practice of this art was similar. Even among ourselves, the merry-thought bone of fowls is deemed to possess a curious virtue.

An extensive set of omens have been taken from observing what first happens to one, or what animal or person one meets first in the morning, or at the commencement of an undertaking—the *first-foot*, as it is called. To stumble, has been universally held to presage misfortune. Some semblance of a reason might be found for this belief, inasmuch as stumbling may be supposed to indicate that self-possession and conscious courage, which are in themselves half a victory over circumstances, are lacking—the want of them, therefore, being half a defeat; but in most cases the interpretation seems altogether arbitrary. The dread of a hare crossing the path seems widely prevalent in Britain; while to see a wolf is a good omen. This feeling is probably a remnant of warlike times, when the timid hare suggested thoughts of cowardice and flight; while the bold wolf, sacred to Odin, was emblematic of victory. The character of the hare for being unlucky is also connected with the deep-rooted belief, that witches are in the habit of transforming themselves into hares. That to meet an old woman is unlucky, is another very general belief; arising, without doubt, from the same causes that lead to their being considered witches. In some places, women in general are unlucky as 'first-foot,' with the strange exception of women of bad reputation. This belief prevailed as far back as the age of Chrysostom. Priests, too, are ominous of evil. If hunters of old met a priest or friar, they coupled up their hounds, and went home in despair of any further sport that day. This superstition seems to have died out, except in the case of sailors, who still consider the clergy a 'kittle cargo,' as a Scotch skipper expressed it, and anticipate a storm or mischance when they have a black-coat on board. This seems as old as the days of the prophet Jonah.

The observation of *lucky* and *unlucky* days was anciently important, and was often the turning-point of great events. It is now confined to the one subject of marriage. In fixing the wedding-day, May among months, and Friday among days, are shunned by many people in all social classes; for in this matter, which is the exclusive province of women, and in which sentiment and fancy are more active than reason, the educated and uneducated are reduced to a level. Perhaps half the superstitious beliefs that yet survive among civilized and Christian communities, group themselves round the subject of love and marriage—of such intense interest to all, yet so mysterious in its origin, and problematical in its issue. The liking or passion for one individual rather than any other, is so unaccountable, that the god of Love has been fabled blind; it is of the nature of fascination, magic, spell. And then, whether happiness or the reverse shall be the result, seems beyond ordinary calculation. All being apparently given over to mystery, chance, fortune, any circumstances may, for what we know, influence or indicate what fortune's wheel shall bring round. Hence the innumerable ways of prognosticating which of two or more persons shall be first married, who or what manner of person shall be the future husband or wife, the number of children, etc. It is generally at particular seasons, as at the Eve of St. Agnes and Hallowe'en, that attempts are made thus to lift the veil of the future.

Sneezing, likewise, has long been looked upon as supernatural, for this reason, that it is sudden, unaccountable, uncontrollable, therefore ominous. The person is considered as possessed for the time, and a form of exorcism is used. A nurse would not think she had done her duty if, when her charge sneezes, she did not say: 'Bless the child,' just as the Greeks, more than two thousand years ago, said: 'Zeus protect thee.'

It is important to observe that an *omen* is conceived to be not a mere sign of what is destined to be, but as causing in some mysterious way the event that it forebodes; and the consequence, it is thought, may be prevented by some counteracting charm. Thus the spilling of salt not only forebodes strife, but strife is conceived as the consequence of the spilling of the salt, and may be hindered by taking up some of the spilled salt and throwing it over the left shoulder.

An important exercise of the diviner's art is to determine the innocence or guilt of parties: see ORDEAL. It would be impossible to enumerate the endless modes of D. for which learned names have been found. Some of the principal are—*Axinomancy* (q.v.), *Belomancy* (q.v.), *Bibliomancy* (q.v.), *Botanomancy*, or divination by means of plants and flowers (practiced by the ancients, who were wont to bruise poppy-flowers between their hands, under the conviction that they could thereby discover their loves: hence Theocritus calls the poppy *Teliphilos*, quasi *Deliphilos;* i.e., a *tell-love.* Goethe has made a beautiful use of another form of this superstition, which existed among the Teutonic races no less than among the old Greeks. The child-like Marguerite, in *Faust*, seeks to discover whether or not Faust loves her by plucking the leaves from a star-flower, murmuring alternately, 'He loves me,' 'He loves me not,' and finds to her joy that the *last* leaf comes away while she is saying, 'He loves me'); *Capnomancy* (q.v.), *Cheiromancy* or *Chiromancy* (q.v.), *Coscinomancy* (q.v.), *Crystallomancy* (q.v.), *Cup, Divination by* (q.v.); *Geomancy* (anciently practiced by casting pebbles on the ground, from which conjectures were formed; but the Arabian geomancy was more recondite, being founded on the effects of motion under the crust of the earth, the chinks thus produced, and the noises or thunderings heard); *Hydromancy*, D. by water or by a mirror, in which the diviner shows the image of an absent person, what he is doing, etc. (this mode of D. plays an important part in the Arabian romances); *Lithomancy*, a species of divination performed by stones, but in what manner is not known; *Oneiromancy* (see DREAMS); *Palmistry* (see CHIROMANCY); *Pyromancy*, or D. by flame (common among the Greeks and Romans: if the flame of the sacrifice was vigorous and quickly consumed the victim, if it was clear of all smoke, and did not crackle, but burn silently in a pyramidal form, the omen was favorable; otherwise, not); *Rabdomancy* (see DIVINING-ROD); and *Teraphim* (q.v.).

DIVINE, a. *dĭ-vīn'* [OF. *divin*, divine; *diviner*, to predict—from L. *divīnus*, of or belonging to a deity—from *dīvus*, a god: It. *divino*]: pertaining to the true God; heavenly; sacred; excellent in the highest degree; above human; in *OE.*, prophetic; prescient: N. a minister of God; a clergyman; a priest: V. [L. *divīno*, I foretell]: to foretell or predict; to guess or conjecture; in *OE.*, to use or practice divination. DIVI'NING, imp. DIVINED', pp. *-vīnd'*. DIVINATION, n. *dĭv'ĭ-nā'shŭn* [F.—L.]: foretelling future events; the pretended discovery of things secret or future by certain rites, or by attention to certain omens or appearances, as the flight of birds, entrails of animals, etc.; augury. **Divinatory**, a. *dĭv′ĭ-nā-tėr-ĭ*, having the nature of, or connected with, divination. **Divine′ness**, n. divinity; supreme excellence. **Divine′ly** ad. *-lĭ*, in a divine or godlike manner. **Divi′ner**, n. one who pretends to predict future events by supernatural means. **Divi′ner-ess**, n. a woman who. **Divining-rod**, a rod, usually made of hazel, with forked branches, used by those who pretend to discover water or metals by its means. **Divinize**, v. *dĭv′ĭn-īz*, to invest with a divine character; to deify. **Div′iniz′ing**, imp. **Div′inized**, pp. *-īzd*. **Divinity**, n. *dĭ-vĭn′ĭ-tĭ* [F. *divinité*—from L. *divinĭtātem*, the divinity, the Godhead]: the divine nature or essence; the Deity; the Godhead; God; a false god; a celestial being, inferior to a god; the science of divine things; theology.—Syn. of 'divine, a.': holy; godlike; superhuman; supernatural;—of 'divine, v.': to foretell; presage; prognosticate; predict; guess; foresee; foreknow; detect; augur.

DIVINE′ RIGHT, of Kings: term applied to describe the source of the power claimed for the monarch, by the royalist party, in the great controversies between the monarchical and the parliamentary or commonwealth parties in England in the 17th c. The monarch was held to be the immediate representative of the Deity, to whom alone he was responsible for all his actions—a principle which relieved him from all human responsibility. The idea was little known in Great Britain until the quiet transfer of the crown from the Tudor to the Stewart dynasty showed that the hereditary principle was firmly established. It was found by some ecclesiastics in the doctrines of the civil law, which, in imitation of the practice of oriental nations, flattered the Roman emperors by attributing to them a power founded on divine institutions. Throughout a long and miserable contention, divine right was on one side claimed to be the source of political power, while on the other it was maintained that that power emanated from the will of the people, expressed in what was called 'the social contract.' The chief writers on the side of divine right were Salmasius and Sir Robert Filmer; on the other, Milton, Algernon Sydney, and Harrington. The controversy revived in the discussions which caused the French Revolution, long after the settlement of the crown on William and Mary and the Hanover dynasty had ended it in Britain.

DIVINE′ SER′VICE, in Old Law: tenure by which the tenant was bound to do some special divine service, e.g. to sing so many masses, to distribute a certain sum in alms, or the like. It differed from Frankalmoigne (q.v.) in this, that the feudal lord could distrain for the former, not for the latter, which, being an indefinite service, could be enforced only by a complaint to the ordinary or visitor.

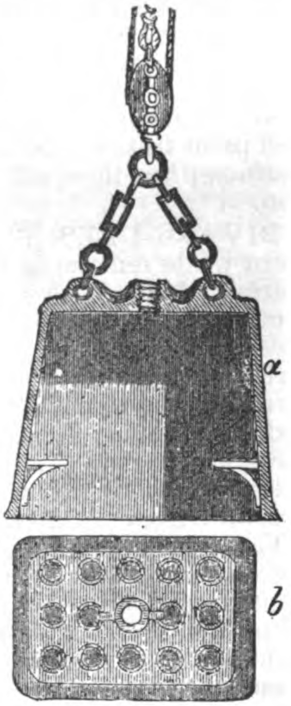
DIV′ING: plunging deeply under water, usually head-foremost. The 'treasures of the deep' have at all times been the subject of much visionary exaggeration, and the accounts of the exploits of divers equally extravagant. In a popular school-book, still in use, children are seriously informed that the pearl-divers of the East acquire by practice the power of remaining under water 15 to 20 minutes. In narratives of ancient date, the time is extended to two hours. It need scarcely be said that these accounts are absurd, no such endurance being possible. The more skilful divers may remain under water, two, or even three minutes; some modern accounts say four, and even six, but this is very doubtful. In a swimming and diving contest between some North American Indians and Englishmen in a London swimming-bath, one of the Indians, a renowned swimmer and diver, remained under water one minute and a half, but a London artistan beat him by a few seconds.

In the *Encyc. Britannica,* Prof. Faraday describes an interesting fact to which his attention was directed by a gentleman connected with the Asiatic Soc., who, according to Prof. Faraday, was the first to make the observation. It was observed that by breathing hard for a short time, as a person does after violent exercise, the breath could then be held much longer than otherwise. Prof. Faraday found that he could only hold breath only three-quarters of a minute, if he attempted it without preparation, but that after eight or ten of such forced inspirations, he could hold breath two minutes. This he explained on the supposition that, ordinarily, a considerable quantity of carbonic acid remains in the involved passages of the lungs, but that it becomes completely expelled by the forced breathing, and its place supplied by atmospheric air. As regards the novelty of the observation, Prof. Faraday's statement was a mistake; for it is known that many years ago, boys bathing in the Serpentine, in Hyde Park, London, commonly practiced it. The Red Indian and the artisan above referred to did the same; it is, in fact, a sort of preparation that a practiced diver would make almost instinctively. After a few deep inspirations of this kind, a sense of giddiness is felt, and it is not prudent to carry the experiment far beyond this stage, as a fit of insensibility not unlike apoplexy is apt to result.

This giddiness, which is always produced, and the possible insensibility, indicates a different explanation from that of Faraday. The mere removal of residual carbonic acid from the lungs is not sufficient to explain these; we should rather suggest that all the phenomena result from an excessive oxygenation of the blood, and a consequently accelerated circulation similar to that produced by breathing nitrous oxide. It will be easily understood, that if the blood be forced to take an excess of oxygen, a longer time should elapse before a fresh supply would become necessary—that is, before suffocation would take place; and the giddiness, flushing of the face, and the insensibility, are results to be expected from such an excess.

Most divers suffer severely from the continual efforts in holding the breath: bloodshot eyes and spitting of blood are common among them. This rude mode of diving is now little used except for pearl and sponge fishing; and even for these purposes, only an uncivilized people, with little money and knowledge, would continue to use it, as the modern applications of science afford immense advantages for all kinds of subaqueous operations: see **Diving-Bell.**

DIVING-BELL: machine in which men can remain under water for a length of time; originally of a bell-like form. The *cacabus aquaticus*, or aquatic kettle, described by Taisnier as used by two Greeks in Spain, at Toledo, 1538, in the presence of the Emperor Charles V. and a multitude of spectators, is one of the earliest recorded diving-bells. From his description, this must have been similar in principle and construction to the modern diving-bell, but of clumsy dimensions, and lacking efficient means of renewing the supply of air. Dr. Halley's diving bell, about 1720, was a wooden chamber of about 60 ft. internal capacity, open at the bottom, where it was loaded with lead, to keep it perpendicular in its descent. Strong pieces of glass were set in the upper part, to admit light. Casks filled with air, and loaded with lead, were let down with the bung-hole downwards; and from these a supply of air was drawn by means of a hose. The form of diving-bell now in use was constructed first by Smeaton for the works at Ramsgate harbor, England, 1788. It was of cast iron, and weighed 50 cwt; its height, 4½ ft; length, the same; and width, 3 ft. It sunk by its own weight, and was lighted by stout pieces of bull's-eye glass, firmly cemented in brass rings near the top. The principle of the diving-bell will be easily understood by floating a piece of lighted candle or a wax-match on a cork, and then covering it with an inverted tumbler, and pressing it downwards; the candle will descend below the level of the surrounding water, and continue burning for a short time, though the tumbler be entirely immersed. The reason is obvious enough: the air in the tumbler having no vent, remains in it, and prevents the water from occupying its place, so that the cork and candle, though apparently under water, are still floating, and surrounded by the air in the tumbler; the candle continues burning until the oxygen of the air is exhausted, and then it goes out, as would the life of a man under similar circumstances. If vessels full of air, like the barrels of Dr. Halley, were submerged, and their contents poured into the tumbler, the light might be maintained: but this could be better done if a tube passed through the tumbler, and air were pumped from above through the tube into the tumbler.



Diving-bell:
a. section showing inside;
b, top.

The modern diving-bell, of cast-iron like Smeaton's, is supplied with air by pumping. It must be remembered that air is compressible, and diminishes in bulk in proportion to the pressure, so that at a depth of abt. 33 ft. in water, it would occupy half the space it filled at the surface; if the inverted tumbler were carried to this depth, it would be half-filled with water. A considerable quantity of air has, therefore, to be pumped into the diving-bell, merely to keep it full as it descends; the air thus compressed exerts a corresponding pressure, and would rush up with great force if the tube were open and free. This is prevented by a valve opening downward only. When the diving-bell has reached its full depth, the pumping is continued to supply air for respiration; and the redundant air overflows, or rather *under*flows, by the open mouth, and ascends to the surface in great bubbles. The diving-bell is provided with a platform or seat for the workmen, and suspended from a suitable crane or beams projecting from a barge or pier; men above are stationed to work the pumps, and attend to the signals of the bellman. These signals are simply made by striking the sides of the iron diving-bell with a hammer, and as sound is freely communicated through water, they are easily heard above. One blow signifies 'more air;' two blows, 'stand fast;' three, 'heave up;' four, 'lower down;' five, 'to eastward;' six, 'to westward;' etc. These, of course, may be modified as agreed upon, Messages can be sent up, written on a label attached to a cord. The workmen accustomed to subaqueous existence suffer no inconvenience from being below water. Novices feel pains in the head and ears, and sometimes a sense of deafness; but these effects pass away after a short initiation.

DIV'ING-DRESS: dress, including apparatus, to be worn while remaining under water. In Schott's *Technica Curiosa*, 1664, is described a *lorica aquatica*, or aquatic armor, which consisted of a leathern dress, to protect the diver from the water, and a helmet. In 1721, Halley describes a contrivance of his own of nearly the same kind; its object was to enable the diver to go out from the bell and walk about; he was to be provided with a waterproof-dress, and a small diving-bell, with glass front, as a helmet over his head, which was to be supplied with air by means of a tube from the diving-bell.

The modern diving-dress is made of Indian-rubber cloth; a strong metal helmet, with round pieces of plate-glass in front, rests upon a pad on the shoulders; the air is supplied to this helmet from above, in the same manner as for the diving-bell, but instead of the waste air passing out below, a second tube carries it up. Leaden weights are attached to the side of the diver, and thus he may descend a ladder and walk about below. He carries with him one end of a cord communicating with the assistants above, and by pulling this, makes a series of signals.

In the diving-dress invented by Mr. Fleuss, patented 1880, the diver is independent of supplies of air from above. In the helmet is a store of compressed oxygen, set free by degrees at the will of the diver; the carbonic acid exhaled by him is absorbed by caustic soda in a receptacle of the dress; while the nitrogen is breathed over and over again. In this dress a man may remain below the surface for several hours without harm.

DIVIN'ING-ROD—often called *Virgula Divina*, or *Baculus Divinatorius*, the Caduceus or wand of Mercury, the Rod of Aaron, etc.: a forked branch, usually of hazel, sometimes of iron, and even of brass and copper, by which it has been supposed that minerals and water have been discovered beneath the surface of the earth. The rod, when suspended by the two prongs, often between the balls of the thumbs, will distinctly indicate, by a decided inclination, it is alleged, the spot over which the concealed mine or spring is situated. Other powers are ascribed to the divining-rod, but this is the chief. Some men, claiming to be scientific, have been believers in the occult power ascribed to this magic wand. Agricola, Sperlingius, and Kirchmayer, all believed in its supernatural influence. So did Richelet, author of the Dictionary. The learned Morhoff remained in suspense, while Thouvenot and Pryce, in the latter part of the 18th c., gave ample records of its supposed power. Bayle, in his Dictionary, under the word *Abaris*, gives some ingenious arguments both for and against the divining-rod. In a work published by Dr. Herbert Mayo, 1847 and '51, *On the Truth contained in Popular Superstitions*, he gave some curious illustrations of the art, supposed to be possessed by one in forty of the Cornish miners. At Weilbach, in Nassau, he met with one Edward Seebold, who, he says, possessed the power, but afterward lost it. Arthur Phippen, 1853, published a pamphlet containing an account of two professional diviners or dowsers. One of them, named Adams, gave remarkable indications of being able to detect water under ground. He not only was able to discover the particular spot where water might be found, he could even perceive a whole line of water running underground.

Scientific men, who have bestowed any care on the examination of nature, regard this alleged power of the divining-rod as an unconscious delusion, ascribing the whole phenomenon to the effect of a strong impression on the mind acting through the agency of the nerves and muscles. See ANIMAL MAGNETISM.

DIVIRIGI, *dī-vĭr'ĭ-jī* (anc. *Tephrene*): town of the province of Sivas, Asia Minor, on the Kurner-Su, a branch of the Euphrates, 28 m. n.w. from Arabkir. Pop. supposed about 10 000.

DIVISI, ad. *dē-vēz'ē* [It.]: a direction that instruments playing from one line of music are to separate and play in two parts. The reunion of the parts is directed by the words *a due*.

DIVISIBIL'ITY: that property of quantity, matter, or extension, through which it is either actually or conceivably separable into parts. Whether matter is or is not indefinitely divisible, is a question which has occupied the minds of philosophers since very early times: see ATOM. There is no doubt that, abstractly speaking, it is indefinitely divisible. We cannot conceive any body or space so small but that we can subdivide it in imagination, and thus figure to ourselves bodies and spaces still smaller; and practically, we know that the subdivision of matter is carried in nature far beyond appreciation either by our senses or by calculation. The diffusion of odors through the air for long periods from odoriferous bodies without their suffering any sensible change of weight, and the tinging of great quantities of fluid by very minute portions of coloring matter, are cases commonly adduced in proof of the extreme fineness of certain material particles; while, by experiment, it is shown that there is no practical limit to the divisibility of even the most solid substances. Thus, an ounce-weight of silver, gilt over with eight grains of gold, has been drawn out into a wire 13,000 ft. long, which was all its length covered with the gold; and a tube of glass presented to the blow-pipe has been drawn out till it became as fine as a silk fibre, or $\frac{1}{2500}$th of an inch thick, still retaining its character as a tube with a distinct interior and exterior surface. In fact, in theory, great and small are mere terms of relation; under the microscope, objects invisible to the eye appear of considerable bulk; and as Sir John Herschel, in his celebrated *Introduction to the Study of Physical Sciences*, has put it, there is no reason why a mote in a sunbeam should not be in itself a world. With regard to the indefinite divisibility of space, it may be demonstrated geometrically; and perhaps, after all, it is the feeling that space is infinitely divisible, which compels our minds most strongly to resist the notion of ultimate atoms with definite forms, as conceived in the corpuscular theory.

DIVISIBIL'ITY, in the Theory of Numbers: capability of any number of being divided by another without remainder. To find the condition of divisibility of one number, N, by another, D. Let $N = b_m r^m + b_{m-1} r^{m-1} + \dots b_1 r + bo$: see NOTATION. Then $N = b_m (D + \overline{(r - D)})^m + b_{m-1} (D + \overline{r - D})^{m-1} + \dots + b_1 (D + \overline{r - D}) + bo$. Expanding the different terms of the right-hand side of this equation, it will appear that $\frac{N}{D}$ will be a whole number, if $bo + b_1 (r - D) + \dots + b_m (r - D)^m$ be divisible by D. Hence, if $r = 10$, or the number be in the denary scale, and $D = 9$, and therefore $(r - D) = 1$, any number will be divisible by 9, if $bo + b_1 + b_2 + \dots + b_m$ be so, or if the sum of its digits be divisible by 9.

DIVISIBLE, a. *dĭ-vĭz'ĭ-bl* [F. *divisible*—from *diviser*, to divide—from L. *divīsus*, separated, divided]: capable of division; that may be separated into parts. DIVIS'IBLY, ad. *-blĭ*. DIVIS'IBIL'ITY, n. *-bĭl'ĭ-tĭ*, the property possessed by bodies of being separated into parts. DIVIS'IBLENESS, n. *-bl-nĕs*. DIVISION, n. *dĭ-vĭzh'ŭn* [F.—L.]: the act of dividing or separating into parts; that which divides or separates; the part separated; a compartment; a part or distinct portion, as of an army, a fleet, a discourse; variance; difference; a process in arithmetic by which is ascertained how many times one number or quantity is contained in another; in either house of parliament, the separation of the members into two parties for the purpose of voting on opposite sides of a question: in *military matters*, body of troops being a section of an army temporarily established for convenience, indefinite in numbers, consisting of two or more brigades of infantry or cavalry, with some artillery. *Naval Division*, formerly a secondary group of ships in a large fleet, generally three to a squadron; now disused, as ships are too gigantic to admit of many being manœuvred in one fleet. *Benefit of Division*, in *Scottish law*, privilege of a co-cautioner to restrict, under certain circumstances, his liability for a guaranteed debt to only his own proportion of it. DIVIS'IONAL, a. *-ŭn-ŭl*, pertaining to a division; denoting a division. DIVI'SIVE, a. *-vī'zĭv*, creating division or discord. DIVI'SOR, n. *-zėr*, in *arith.*, the number by which the dividend is divided (see DIVISION, in Arithmetic: PRIME NUMBERS). DIVISIONAL PLANES, in *geol.*, a term applied to those lines of separation which traverse rock-masses, and divide them into blocks or fragments more or less regular.—SYN. of 'division': section; partition; share; difference; disunion; discord; portion; segment; alienation; contrast.

DIVIS'ION, in Arithmetic: one of the four principal rules; that by which it is found how often one quantity is contained in another. It is a compendious method of subtraction, by which we can at once take one number from another as often as it is contained in it. There are three numbers concerned in division: the dividend, or number to be divided; the divisor, or that by which the dividend is to be divided; and the quotient, or the number expressing how often the divisor is contained in the dividend. The symbols of division are $b)\,a$ (, $\frac{a}{b}$, or $a \div b$, in which a is the dividend, and b the divisor.

There are various methods of division, such as the English, Flemish, Italian, Spanish, German, and Indian methods, which differ merely in the manner of arranging and disposing the numbers. For the English method, see any text-book of arithmetic. There are rules of division also for the division of integers, fractions, and algebraic quantities. The general rule for the division of vulgar fractions is, to multiply the one by the reciprocal of the other. The division of decimal fractions is performed in the same way as the division of integers. In algebra, division is practically performed as in arithmetic, either by making a fraction of the dividend and divisor, and reducing the numerator and denominator by the parts common to both, or else by dividing the former by the latter, after the manner of long division: see any text-book on algebra. For division by logarithms, see LOGARITHMS.

DIVISION, UNITED STATES MILITARY: one of three sections of the country to which the regular army is apportioned (1888). The first is the D. of the Missouri, which comprehends the departments of the Missouri, Tex., Dak. Terr., and the Platte, contain 7 regts. of cav. and 19 of inf., and has headquarters at Chicago; the second is the D. of the Atlantic, includes the dept. of the east, contains 4 regts. of artil. and 2 of inf., headquarters, New York; the third is the D. of the Pacific, comprehends the departments of Cal., the Columbia, and Arizona, contains 1 regt. of artil., 3 of cav., and 4 of inf., headquarters, San Francisco. Each D. is under command of a maj.gen., and each dept. under a brig.general.

DIVISION OF LABOR, or of EMPLOYMENT: important topic in political economy, including the means by which labor is economized, or, in another method of stating the same result, by which production is increased. The problem in division of labor is so to adjust matters in any given community that each member of it shall work, or be able, if he chooses to work, with the greatest possible results. In practice it is, like most other arrangements, apt to be too broad or too narrow. The old term, 'jack of all trades and master of none,' expresses a truth. On the other hand, few people can do any sort of work to great perfection, unless it is part, as it were, of a group of functions for all of which they are more or less prepared. A good dentist will be in some measure a surgeon; a conveyancer or a special pleader will know something of the other departments of legal practice; a shipwright will be able, on occasion, to do other kinds of carpentry, and he will be the better for a general knowledge of the mechanical powers. That division of labor, in fact, which is really productive, is where a man who can do several things selects one as that which he can do best, or has most opportunity of doing. By constant practice at that one thing, and withdrawal of his attention from other matters, he achieves perfection and rapidity of execution. There is an important difference between this selection of a special pursuit, and the inability to do more than one thing, which is often confounded with it. In the former case, the worker, whether with head or hand, has great resources, for his adopted pursuit is the best, out of several others, on which he can fall back. The man who can do only one thing is in a precarious condition, because that one thing may be superseded. Indeed, as the one thing which can be so done is generally a very simple thing, it is almost a law in political economy that it will come to be superseded by machinery. Such was the fate of the hand-loom weavers, whose function, especially in the plainer and lighter fabrics, was too easy to last. Of the divisions of unskilled and easy labor, there is an excellent illustration in Adam Smith's description of pin-making: 'One man draws out the wire, another straights it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on is a peculiar business; to whiten the pin is another; it is even a trade by itself to put them into a paper; and the important business of making a pin is in this manner divided into above eighteen distinct operations, which in some manufactories are all performed by distinct hands.' This division was doubtless useful, so long as pins were made entirely by human hands. It prompted serious inquiries, however, how far such functions were of an improving or a deteriorating character, and essays were written to prove that in manufacturing countries human beings were deteriorating, as no one of them had the faculty of self-support in separation from his fellows, and none could even make a single article by himself, all being dependent for their bread on a complex co-operation, which might break down any day. The answer appears in the pin-making of the present day, where one man tends a machine, feeding it with wire at one end, while the pins drop out at the other. This, too, is the fruit of division of labor, for many skilful heads and hands have been occupied in bringing to perfection the different parts of the machinery. It is of the highest importance to the working classes of a country, to keep in view that though the division of labor does sometimes create functions which, while they are extremely simple and easy, are of value as helping other functions to go on, yet this kind of easy and uniform work has no stability, and the possession of the facility for doing it acquired by practice is no permanent industrial endowment, since it is likely some day to be superseded by machinery.

A further illustration of the D. of L. is to be found in very many of the trades and industries of the United States to-day. Years ago, when the apprenticeship system prevailed generally, a novice was instructed in all the minutiæ of his trade, and on the completion of his time was competent to perform every part of the labor involved in making the article of his trade. Within a comparatively few years, however, all this has been changed. The few apprentices that are now allowed in the factories and shops are trained to do a specific portion of the work, not the whole of it; and workmen, already able to take the rough materials and fashion the article ready for sale and wear, are divided into 'teams,' each one of which works only on one branch of the trade. The manufacture of hats, boots, and shoes, furniture, and countless other articles, is carried on by the 'team' system, and few of the younger workmen can do any of the work other than the particular portion assigned to their team. But while this D. of L. prevents a single workman making the article from beginning to end, it has the advantage of creating just so many more branches of skilled labor, as in hat making for instance, which now requires expert formers, dyers, binders, tipmakers, and other special operators.

DIVORCE, n. *dĭ-vōrs′* [F. *divorce*—from L. *divortĭŭm*, a separation from another—from *dis*, asunder; *versus*, turned: It. *divorzio*]: a separation from another; the dissolution of the marriage bond; a legal separation between man and wife, by which each becomes free to marry another; a separation of things closely united: V. to dissolve the marriage-bond; to separate or disunite things closely connected; to force asunder; to put away. **Divor′cing**, imp. **Divorced′**, pp. *-vōrst′*. **Divorce′ment**, n. divorce. **Divor′cer**, n. *-sėr*, one who. **Divorce′able**, a. *-ȧ-bl*, that may be divorced. **Div′orcee′**, n. *-vōr-sē′*, a person divorced. **Divorce′less**, a. that cannot be divorced.

DIVORCE′, in Law: dissolution of marriage, by a competent court on due cause shown. In heathen nations, D. was granted often on the slightest grounds. Even among the Romans, marriage was regarded as little more than a conventional union, to be observed so long only as it suited the mutual convenience of the spouses. One ancient nation, the Hebrews, had a system of laws in which marriage was guarded under a divine sanction. Christian nations, adopting as the basis of their systems the same Scriptural law, as authoritatively developed and declared by Christ—Matt. xix. 9; Mark x. 9–11; Luke xvi. 18; and as in I. Cor. vii. 10, 11, are agreed in considering marriage a sacred tie, not to be dissolved except on the ground of adultery; though in some systems of laws the ground is enlarged to include cruelty, wilful desertion, habitual drunkenness, etc. Even the most limited ground for dissolution of marriage is denied by a large portion of the Christian world. By the civil law, as it existed for some centuries after Christianity, a greater laxity was allowed in regard to divorce. The emperor Constantine was the first to prohibit dissolution of marriage by simple consent of the parties. That practice was revived under the emperors Theodosius and Valentinian; and though those emperors subsequently rescinded this edict, yet the rule as to the grounds on which marriage might be dissolved continued to fluctuate. By the canon law, marriage was regarded as a sacrament; and though marriages contracted in disobedience to certain rules might be declared null *ab initio*, a marriage validly contracted would not be dissolved except by papal dispensation. But the rule of the canon law was not uniformly adopted by the states of Europe, and it was not till the famous Council of Trent issued a decree, in its 24th session, 1562 declaring marriage indissoluble even after the adultery of one or both of the parties, that a uniform rule on the subject was established. But before this decree was issued, the reformation had made progress throughout Europe, and thus a change again took place in regard to the law of divorce. It should be observed, that though by the canon law D. *a vinculo matrimonii* was unattainable, parties might obtain a separation *a mensâ et thoro*. The nature of this remedy will be explained below.

Rom. Cath. countries adopted the principle laid down by the Council of Trent, and this rule continues in force in most countries in that communion. But by the Code Civile of France, D. is allowable on the ground of adultery and certain other causes. Countries which adopted the reformed religion, have varied greatly in the rules established as to divorce. In Holland, it is permitted on the ground of adultery and desertion. In the United States, the practice varies in different states. 'In several of them no divorce is granted but by special act of the legislature, according to the English practice; and in others, the legislature itself is restricted from granting them, but it may confer the power on courts of justice. So strict and scrupulous has been the policy of South Carolina, that until recently there was no means of obtaining a divorce of any kind, either by sentence of a court of justice or by act of the legislature. In all other states, divorce *a vinculo* may be granted by courts of justice for adultery. In New York the jurisdiction of the courts as to absolute divorce for causes subsequent to marriage is confined to the single cause of adultery; but in most of the other states, in addition to adultery, in tolerable ill-usage or wilful desertion, or unheard-of-absence, or habitual drunkenness, or some of them, will authorize a decree for divorce *a vinculo* under different modifications and restrictions.'—Kent, *Comm.* iv. 105. In case of D. Alimony (q.v.) is usually in the discretion of the court. As to custody of children, other things being equal, the father's claim has precedence; but the first consideration is the welfare of the children, and the next is the right of the innocent parent. Concerning these various claims, the decision rests with the court.

In England, previous to the passing of the late Divorce and Matrimonial Act (1857, amended 1873), marriage was by the common law indissoluble. It was, indeed, competent to obtain a declaration of nullity of marriage on the ground of relationship, previous marriage of one of the parties, mental or physical incapacity, or coërcion. But the judgment so obtained was not a decree of D., but a declaration that marriage between the parties had never really been contracted. A wife may now (since 1857, by a decree of the 'divorce and matrimonial court,' included in the probate, divorce, and admiralty division of the high court of justice) obtain a D. on the ground of the husband's incestuous adultery, or of his bigamy with adultery; or of rape: or of sodomy; or of adultery coupled with gross cruelty; or of adultery coupled with desertion without reasonable excuse for two years. The husband may obtain a D. on the ground of the wife's adultry. But neither party can obtain a D. on the ground of mere des rtion alone, however long continued. The court may order the husband to pay a divorced wife a certain sum for her maintenance during their joint lives. A decree of D. does not come into full force until six months after it is pronounced. The bars to a D. are condonation, connivance, or collusion. When divorced, the parties are at liberty to marry with third parties. When the D. is on the ground of adultery, both parties may be examined as witnesses, 32 and 33 Vict. c. 68. Judicial separation, instead of D., may be decreed by the court.

In Scotland, D. may be obtained on the ground of adultery or wilful desertion. Immediately after the reformation, the courts in Scotland recognized the right of either spouse to obtain a D. on the ground of adultery. And in 1573, a statute was passed declaring that, in case either husband or wife should desert without due cause for four years, the injured party might raise an action of adherence, and, in case redress was not obtained, a decree of D. might be pronounced. In Scotland, it is not permitted that a marriage should take place between the offending parties through whose action the D. has come. The effect of a decree of divorce on the pecuniary interests of the parties, is to cause the offender to forfeit all benefit which might accrue to him or her from the marriage. Separation *a mensâ et thoro* also may be obtained in Scotland on the ground of ill-usage, and perhaps desertion (q.v.). Condonation and collusion, but not recrimination, are, in Scotland, a bar to obtaining a dissolution of marriage on the ground of adultery.

Judicial separation, as the separation *a mensâ et thoro* is now called, is not counted as D. The parties separated by this decree cannot marry again while both are living. Usually, in regard to property each party is declared to have an independent right to whatever is actually possessed or may be acquired by each respectively.

From the conflict of laws in various countries on the subject of D. questions have frequently arisen as to the competency of a sentence of divorce by a tribunal having power according to the *lex loci* to pronounce such sentence, to annul a marriage contracted in a country where such divorce is not allowed. It appears now to be the generally received opinion, that wherever parties are domiciled they will be allowed to avail themselves of the laws of this domicile. But the courts will not recognize a transient visit to a foreign country as sufficient ground to sustain a divorce.—On the subject of D., see Paterson's *Compendium of English and Scotch Law*, Fraser's *Personal and Domestic Relations*, and Swabey *On the Divorce and Matrimonial Act*.

DIVOTO, ad. *dē-vō′tō* [It.]: devoutly; with devotion.

DIVULGE, v. *dĭ-vŭlj′* [F. *divulguer*, to publish—from *divulgārĕ*, to spread among the people—from *dis*, asunder; *vulgo*, I make public: It. *divolgare*]: to make public; to tell something formerly secret or unknown; to disclose; to reveal. **Divul′ging**, imp. **Divulged′**, pp. *-vŭljd′*. **Divul′ger**, n. *-vŭl′jĕr*, one who; also **Divulgater**, n. *dĭv′-ŭl-gāt′ėr*.—Syn. of 'divulge': to discover; uncover; tell; publish; communicate; impart; proclaim.

DIVULSION, n. *dĭ-vŭl′shŭn* [F. *divulsion*, a violent separation—from L. *divulsĭōnem*, a plucking asunder—from *dis*, asunder; *vulsus*, pulled or torn away. It *divulsione*]· the act of rending asunder or plucking away. **Divul′sive**, a. *-sĭv*, that rends or pulls asunder

DIX, *dĭks*, **Dorothea Lynde**· 1805-1887, July 19 b Worcester, Mass : philanthropist. She received a liberal education, and taught school in Boston. On inheriting a considerable fortune she began her great work for the amelioration of suffering humanity, 1830. Her first labors were in the Mass. State Prison, Charlestown, where she established a school and taught four years. Anxious for a sphere possessing greater claims to practical reform, she went abroad, and during 1834–38 made a thorough study of the methods of treatment there employed for the pauper, insane, and criminal classes. On her return she started on an inspecting tour of the various prisons and poor-houses in the United States, studying particularly the accommodations and treatment of the insane, and suggesting radical improvements in public addresses and the newspaper press. She appealed in person before one legislature after another in behalf of a separate detention and a scientific course of treatment of the insane, and to her efforts more than to those of any other person are due the existence of the grand asylums for that class of unfortunates in every part of the country. During the war against secession she held the office of supt. of female nurses by appointment of the sec. of war, and rendered invaluable service. At its close she resumed her mission among the insane, lived with them and died among them in the N. J. State Asylum at Trenton. Her entire fortune was applied to this grand object and she never accepted from any source a cent of pay for services or expenses.

DIX, John Adams, ll.d.: 1798, July 24—1879, Apr. 21; b. Boscawen, N. H.: soldier and statesman. He received a collegiate education, entered the U. S. army as cadet 1812, served with his father, Maj. Timothy D., of the 14th inf., was promoted ensign 1813, and took part in the operations on the Canadian frontier. He was promoted 2d lieut. 1814, appointed adj. to Col. J. De B. Walback same year, and aide-de-camp to Gen. Jacob Brown, commander of the n. milit. dept., 1819, and while stationed at Brownsville studied law, and was subsequently admitted to the bar at Washington. In 1826 he was sent on a confidential mission to Denmark, and soon after his return and while holding the rank of capt. was compelled by ill-health to resign from the army. He began the practice of law in Cooperstown, N. Y., 1828; was appointed adj.gen. of the state 1830, and sec. of state and supt. of public schools 1833, and removed to Albany. In 1841 he was elected a member of the assembly, 1841–43 was editor-in-chief of *The Northern Light*, a literary and scientific journal, 1845-49 was a U. S. senator, elected as a democrat, 1848 was defeated as the free-soil democratic candidate for gov., and became asst. U. S. treas. at New York under Pres. Pierce. During the first three months of 1861, at the outbreak of the rebellion, he was sec. of the U. S. treas., and as such telegraphed an order to New Orleans closing with the memorable words. 'If any one attempts to haul down the American flag, shoot him on the spot.' He was the first pres. of the Union Defense Committee of New York, organized and sent to the field 17 regts. on the first call for troops, was appointed one of the four maj. gens. to command the N. Y. state forces, and was commissioned maj.gen of vols. 1861, June. In 1862 he was assigned to the command of Fortress Monroe; 1863 took charge of the dept. of the e., with headquarters at New York, and served there till the close of the war; 1866 was appointed naval officer at the port of New York, and the same year U. S. minister to France; 1872 was elected gov. of New York as a Republican; and 1874, defeated for reelection. Besides his public offices he was at times comptroller of Trinity Church corporation, deputy to the gen. convention of the Prot. Episc. Church; pres. of the Miss. and Mo. railway company; first pres. of the Union Pacific railway company; and pres. of the Erie railway company.

DIX, MORGAN, S.T.D., D.C.L.: eldest son of Gen. John A. D.; b. New York, 1827, Nov. 1: rector of Trinity (Prot. Episc.) Church. He graduated at Columbia College 1848, and the Genl. Theol. Seminary of the Prot. Episc. Church 1852, was ordained deacon the latter year, and priest 1853, was appointed asst. minister in Trinity parish 1855, chosen asst. rector 1859, and rector 1862. He is pres. of the standing committee of the diocese of New York, vice-pres. of the New York Prot. Episc. public school, trustee of the principal educational and charitable institutions of the denomination, and executor of several estates and private trusts. In 1886 he was pres. of the house of delegates at the gen. convention of the Prot. Episc. Church. He has published several vols. of sermons and manuals of devotion, beside *Commentary on the Epistle to the Romans* (1864), *Exposition of the Epistles to the Galatians and Colossians* (1866), *Lectures on the Pantheistic Idea of an Impersonal Substance Deity, as contrasted with the Christian Faith concerning Almighty God* (1865), *Lectures on the Two Estates: that of the Wedded in the Lord, and that of the Single for the Kingdom of Heaven's Sake* (1872), and *Memoir of John A. Dix* (1883). He received the degree of S.T.D. from Columbia College 1862, and D.C.L. from the Univ. of the South 1885.

DIX ISLAND: rocky formation in Penobscot Bay, 10 m. s. by e. of Rockland, Me.; composed almost wholly of remarkably fine granite; area 55 acres. The U. S treas. building at Washington, and the U. S. post office building at New York were built of granite quarried on this island, and dressed, fitted, and marked for exact location before shipment. The pop. consists of from 1,200 to 1,500 men employed in the quarries, and their families.

DIXON, *dĭks'n*, **WILLIAM HEPWORTH**: 1821–1879, Dec. 27; b. in the West Riding of Yorkshire: English author. He settled in London 1846, where he soon acquired reputation by his writings. A series of papers, in the *Daily News*, 'On the Literature of the Lower Orders,' and another on 'London Prisons,' attracted attention. The latter reappeared in a volume 1850. Before this, but in the same year, he published *John Howard, and the Prison World of Europe*. It was with difficulty that he could induce a publisher to accept it, yet when published, it went through three editions in one year. D. now devoted himself principally to historical biography. In 1851, appeared the first edition of *William Penn*, in which D. undertook to disprove Macaulay's charges against the eminent Quaker. In 1852, was published *Life of Blake;* and in the same year an anonymous pamphlet, entitled *The French in England*, designed to allay the fear of a French invasion. In 1853, D. was appointed editor of the *Athenæum*, which position he held for 16 years. In 1860, he published *Life of Lord Bacon*, and in 1863, *The Holy Land*. He gave the public *New America* in 1867; *Spiritual Wives* in 1868; *Free Russia* in 1870; *The Switzers* in 1872; *History of Two Queens* in 1873–4; *White Conquest* in 1875; and *British Cyprus* in 1879. *Her Majesty's Tower* (4 vols.), begun 1870, was followed by *Royal Windsor*. *Diana Lady Lyle* (1877) and *Ruby Grey* (1878) were novels.

DIX'ON ENTRANCE: strait on the w. coast of the Dominion of Canada, separates Queen Charlotte Island from the Prince of Wales Archipelago, and so divides British territory from a part of the U.S. domains.

DIXWELL, *dĭks'wĕl*, JOHN: 1607–1689, Mar. 18; b. Folkestone, England: one of the regicides. He was descended from a prominent Kentish family and was a man of estate; became a col. in the army under Cromwell, a member of four parliaments and three councils, and of the high court which condemned Charles I. He was condemned to death with his associates after the restoration, but escaped to America and settled in New Haven, changed his name to John Davids, and raised a family. Two of his fellow regicides, Whalley and Goff, found a refuge at Hadley, Mass., about the same time.

DIZEN, v. *dĭz'n* or *dī'zn* [from the same root as *distaff*]: to prepare flax on a distaff for spinning; to dress; to dress or deck out gaudily.

DIZFUL, *dĭz-fôl':* town of Persia, on the river Dizful; lat. 32° 10′ n., and long. 48° 34′ e. It is cap. and principal mart of its province (Khužistan). A handsome bridge of 20 arches crosses the river here. The foundation is of stone and of ancient date, the upper portions are of brick and are modern. Pop. estimated 15,000.

DIZIER, ST., *săng dē-ze-ā':* town of France, dept. of Haute-Marne, 10 m. n. of Vassy; on the Marne, which here begins to be navigable. It is very long and narrow, but well-built, the streets being wide, clean, and regular. In 1544, D. resisted for a month the assaults of a Spanish army under Ferdinand de Gonzaga; a resistance of the greatest consequence to the French ruler, Francis I., the delay enabling him to collect his forces to oppose the march of the Spaniards upon Paris. In 1814, the French twice defeated here the invading army of the allies. The chief industrial features of the place are iron forges and foundries, boat-building yards, in which a great number of river and canal boats, generally of about 100 tons, are constructed, and cotton factories. There is also considerable trade in wood, iron, and grain. Pop. 10,000.

DIZZY, a. *dĭz'zĭ* [AS. *dysig*, foolish: Low Ger. *düsig*, giddy, dizzy: Dan. *disig.* hazy]: having a sensation of swimming or whirling in the head, with a tendency to fall; causing giddiness; giddy; thoughtless: V. to make giddy; to confuse. DIZ'ZYING, imp. *-zĭ ĭng.* DIZ'ZIED, pp. *-zĭd.* DIZ'ZILY, ad. *-lĭ.* DIZ'ZINESS, n. the sensation of swimming in the head; giddiness.

DJERRID, or JERRID, n. *jėr-rēd'* [Ar. *jarid,* a leafless palm-branch, a lance]: a Turkish javelin.

DJEZZAR, *jĕz'zar,* i.e., *Butcher:* name given to Achmed Pasha, the cruel governor of Acre: abt. 1735-1804; b. Bosnia. He rose through murder and treason, from the condition of a slave to the pashalic of Acre. In the beginning of 1799, the French entered Syria from Egypt, and advanced from victory to victory till they reached Acre, which they besieged, Mar. 20. By the advice of Colonel Philippeaux, a French émigré, and of Sir Sydney Smith, the commander of the British fleet in the Levant, D. was induced to hold out; and such was the savage doggedness of his resolution, that Bonaparte was obliged to retire May 21. It is said that during the siege he sat on the floor of his palace surrounded by a heap of gory skulls, distributing money to all who brought in the heads of Frenchmen. He died at Acre. D. was at times maniacal in his cruelties. He took off the heads of his wives without the slightest ceremony—seven at a time. But he had also moments of remorseful tenderness, in which he helped the poor and provided for those that he had injured. He is said to have possessed sharp discernment.

DMITROV, *d'mē-trŏv':* ancient town of Russia, on the Jakhrama, an affluent to the Volga, 40 m. n. of Moscow. It covers a large area, a considerable part of which is occupied by gardens, but as a whole is poorly built. It contains a college and seven churches, and has manufactures of silk and cotton goods, tanneries, etc. Pop. (1880) 35,000.

DNIEPER, *nē'pėr:* one of the large rivers of Europe, has its source in swampy forest-lands in the n. of the Russian govt. of Smolensk. Its general direction, till it reaches Kiev, is south. From Kiev, its course is s.e. to Ekaterinoslav, where it turns directly s. past Alexandrovsk, below which town it sweeps to the s.w., and pursues that direction until it debouches in the Black Sea, between the govts. of Kherson and Taurida, its embouchure forming a gulf of about 50 m. in length, with a breadth of from 1 to 6 m. Its principal affluents are the Desna and Soj from the east, and the Pripet, the Beresina, and the Druz from the west. The total length of the D. is upward of 1,000 m., and it is navigable almost from its source, it breadth at Dorogobush, about 50 m. below its source, being 210 ft. Some of the finest govts. of the Russian empire lie within its basin, with all of which its navigable branches and canals give it communication. In its upper part, it flows through a marshy forest territory; its middle and lower course is rocky. Below Ekaterinoslav, there are no less than 13 rapids in about 40 miles; but these impediments to navigation have been overcome in part by blasting, and by great hydraulic-works erected by the Russian government. The produce of the provinces, consisting mostly of corn, timber, iron, salt, hemp, and linen, are usually conveyed down the river to ports on the Black Sea, but many vessels pass annually from the D to the Baltic by the Beresina and the Dwina. At Smolensk, the waters of the D. are frozen from Nov. to Apr.; at Kiev, they are ice-bound only from Jan. to March. Sturgeon, carp, and pike abound in the river. As the *Borysthenes* the river was known in the 7th c. before Christ to the Greeks, who regarded it as the most valuble river on earth next to the Nile.

DNIES′TER, *nĕs′tėr:* river of Europe, flowing chiefly through Russia, but having its rise in the Carpathian Mountains, in the Austrian crown-land of Galicia, about lat. 49° 10′ n., long. 23° e. Its general course, until it reaches the Russian territory, is s.e; it then runs e. for a short distance, and thence s.s.e., forming the boundary between Bessarabia Kherson, past Mohilev, Dubossari, and Bender, to the Black Sea, which it enters by a shallow shore lake, 19 m. in length and 5 in breadth, between Ackerman and Ovidiopol. The total length of the D. is between 500 and 600 m., its current throughout being very rapid. Until it reaches the Russian frontier, its right bank is skirted by offsets from the Carpathians; but at that point, the country, which above has been level on only one side, opens into a broad flat plain, through which the river, broken at intervals by masses of rock, rushes muddy and turbid. The downward navigation is interrupted by a series of falls and whirlpools. Wood and grain are the chief products conveyed down the river.

DO, v. *dô* [AS. *don;* Dut. *doen*, to do: AS. *dugan*, to profit, to avail: comp. Gael. *dean*, to do, to make, to perform]: to act, to practice; to perform; to achieve; to succeed; to fulfil a purpose; to finish or end, as, 'I have *done* with the book'; to cease to be concerned, as, 'I have *done* with him'; in *Scrip.*, to make, as, 'we *do* you to wit,' that is, 'we make you to know'; to put into the form of, as, '*done* into verse'; to fare; to be in a state in regard to health. **Do′ing**, imp. **Did**, pt. *dĭd.* **Done**, pp. *dŭn*, finished. **Doest**, *dô′ĕst*, or **Dost**, *dŭst*, 2d sing. pres. tense. **Does**, *dŭz*, or **Doth**, *dŭth*, 3d sing. pres. tense. **This will do**, this will answer the purpose. **How do you do?** how are you in health? how do you get on?—usually a mere salutation of respect. **Done up**, ruined. **Done with**, finished; completed. **To do with**, to make use of; to employ. **To do away**, to remove; to destroy. **To do up**, to envelop; to pack up. **To do with**, to dispose of, to employ. **To do for**, to answer for; to suit; *colloquially*, to baffle completely; to ruin. **To do without**, to be able to dispense with; to get along without. Do is used along with a verb to render it emphatic, as, 'I *do* love.'

Note 1.—Do has much the same extensive application as a verb, which *thing* has as a noun; *thing* may be put for almost any object, and *do* may be used instead of almost any verb in order to save the repetition of the verb, as, 'I shall come. but if I *do* not, then you need not remain,' that is, 'if I come not.'

Note 2.—Do in the imperative expresses vehement command, an earnest request, as, '*do* help me'; 'make haste, *do*.'

Note 3.—Do [AS. *dugan*, to be worth: prov. Eng. *dow*, to avail, to suit]: to succeed, to fulfil a purpose, to fare, is really different from the word Do, to act, to perform. As will be observed, they are from different roots, but their significations are so intermingled that it appears impracticable to group them under their separate heads.

DO, n. *dō:* in *music*, the Italian name for the first or C note in the scale; the key-note: *do* was formerly named *ut*.

DO, v. *dô* [a slang colloquial word]: to cheat: N. a cheat; an imposture.

DO , pronounced as if written *dĭt′tō:* an abbreviation of DITTO, which see.

DOAB, n. *dō′ăb* or *dŏb:* a building composed of clay and straw: see COB.

DOAB, wrongly written DOOAB, n. *dō′âb*, [from Sanskrit, two rivers]: in the *E. Indies*, a tongue or tract of land which lies between two or more confluent rivers. The two roots of the word are common to all the Aryan languages: the first appears in Lat. *duo*, Eng. *two;* the second in Celt. *av*on, a river, and in Dan*ube* or Don*au*. Punjab ('five rivers') is a term of the same kind; but while Punjab is merely a proper name of one particular region, Döab is the common appellation of any region in general that fulfils the conditions. When introduced, however, without local reference of any kind, the Döab means the space inclosed by the Jumna on the s.w. and the Ganges on the n.e.—a space extending from Allahabad to the base of the Himalayas, a distance of upward of 500 m., with an average breadth of 55. The fertility of this region has been much increased by the Ganges Canal (q.v.).

DOB′CHICK: see GREBE.

DOBELL, *do-bĕl′*, SYDNEY: 1824–74; b. London: modern English poet. His father, a wine merchant, removed to Cheltenham 1835. Here D., whose education was entirely private, lived till 1850, when the *Roman* was published, and received with favor by the literary world. D. resided some time in Switzerland, and then in Edinburgh till 1857. He afterward resided on the Cotswold Hills, near Gloucester. Beside the *Roman*, D. published *Balder* (1854), *Sonnets on the War*, in conjunction with Mr. A. Smith (1855), and *England in time of War* (1856). His poems have a singular mixture of the philosophical and the poetical spirit. Many of his passages are as spiritual in conception and lavish in imagery as the finest portions of Shelley; others are as obscure, intricate, and involved as the rhymed enigmas of Cowley or Donne. In 1865, D. published a political pamphlet advocating a graduated suffrage and plurality of votes; and in 1871, *England's Day*, a lyric. A collected edition of his poems was published 1875; and in 1876, *Thoughts on Art, Philosophy, and Religion*. See *Life and Letters of Sydney Dobell* (1878).

DÖBELN, *dö'bĕln:* town of Saxony, 36 m, s.e of Leipsic, on an island formed by the Mulde. It is well built, and contains a richly endowed hospital. Its chief manufactures are linen, woolen, and cotton cloth, brassware, and hats. D. has also several bleach-fields and worsted-mills. Pop. (1880) 11,802.

DOBROWSKI, *do-brŏv'skē*, JOSEPH: founder of Slavic philology: 1753, Aug. 17—1829, Jan. 6; b. Gyermet, near Raab, in Hungary, where his father, a Bohemian by birth, was stationed in garrison. He studied at the gymnasium of Deutschbrot, and at Klattau and Prague. In 1772 he entered the order of the Jesuits at Brünn, but on its dissolution ten months after, he returned to Prague, to continue his theological studies, and in 1776 became tutor in the family of the Count von Nostitz. During 1780–87, he edited a critical journal of Bohemian and Moravian literature. This soon involved him in various strifes, and ultimately the review was 'stopped' by the authorities, but not before it had added largely to D.'s reputation. In 1792, at the expense of the Royal Bohemian Scientific Soc., he made a journey to Denmark, Sweden, and Russia, to search after the fate of those Bohemian books and MSS. which the Swedes had carried off from Prague during the Thirty Years' War. Two years later, he travelled through Germany, Italy, and Switzerland. On his return, he showed symptoms of a disordered mind, and in 1801 had to be confined for some time. He speedily recovered, but was subject to intermittent fits of insanity until his death. D. is reckoned one of the highest, if not the very highest, authority on Bohemian history and literature. His principal productions are—*Scriptores rerum Bohemicarum* (Prag. 2 vols. 1783–4); *Geschichte der Böhm. Sprache und ältern Literatur* (Prag. 1792); *Die Bildsamkeit der Slaw. Sprache* (Prag. 1799); *Deutsch-Böhm. Wörterbuch* (2 vols. Prag. 1802–21), in which he was largely assisted by other eminent Bohemian scholars; *Lehrgebäude der Böhm.-Sprache* (Prag. 1809); and *Institutiones Linguæ Slavonicæ Dialecti Veteris* (Vienna, 1822).

DOBRUDSCHA, or DOBRUDJA, *dō-brôd'shâ* or *dō-brô'jâ* (anciently *Scythia Minor*): region formerly Turkish, now belonging to Roumania; between the lower Danube and the Black Sea; the Berlin Congress of 1878, in transferring it to the principality, fixed the s. limit, formerly somewhat indefinite, at a line from Silistria on the Danube to Mangalia on the sea-coast. The n.e of this region is occupied by marshes and the delta of the Danube; the rest of the area is partly steppe and partly cultivated corn-land. There is much manufacture of salt. Pop. (1880) 100,000, comprising 32,000 Roumanians, 28,000 Bulgarians, 15,000 Russians, 16,000 Turks, with Circassians, Tartars, Greeks, Armenians, and Jews.

DOBSON, *dŏb'son*, HENRY AUSTIN: b. Plymouth, England, 1840, Jan. 18: poet. He was educated at Beaumaris, Coventry, and Strasburg, had an early inclination toward civil engineering, but entered the civil service when 16 years old, and has since been connected with the board of trade. He was introduced to the public as a poet by Anthony Trollope in his magazine, *St. Paul's*, 1868; published his first collection of lyrics, *Vignettes in Rhyme, and Vers de Sociétié*, 1873, and followed it with *Proverbs in Porcelain* (1877), and *At the Sign of the Lyre* (1885). A selection from the first two was published in New York 1880, and reprinted in England under the title of *Old-world Idyls* 1883. He has also contributed largely to the *Biographies of Great Artists* (1879); edited for the *Parchment Library* the *Eighteenth Century Essays* (1782), *Gay's Fables* (1882), and *The Vicar of Wakefield* (1883); for the *Clarendon Press*, *Beaumarchais' Le Barbier de Séville* (1884), and *Selections from Steele* (1885); contributed a study of Bewick, the artist and wood-engraver to the *Century* magazine, republished in England under the title of *Thomas Bewick and his Pupils* (1884); and was author of the *Life of Steele* in the *English Worthies* series (1886).

DOB'SON, WILLIAM: 1610–46; b. London: painter. He was a pupil of Robert Peake, became a portrait painter of much merit, and, having won the regard of Vandyck by his excellent drawing and coloring, was recommended by him to the favor of Charles I. After Vandyck's death he was appointed sergeant-painter to the king. His portraits possessed much dignity, but had very dark face shadows, and resembled in some points those of Lely and Vandyck. He attempted historical painting but did not succeed, and died poor.

DOCE, RIO, *dō'sā:* river rising at base of Mt. Itacolumi, s.e. of Ouro Preto, prov. of Minas Geraes, Brazil, and falling into the Atlantic near Regencia, 60 m. n. of Victoria, after a tortuous course of 500 m. It has a wide, shallow mouth, is difficult of entrance, navigable by small steamers all the year round as far up as Porto de Souza, and beyond only by canoes and for irregular distances on account of the rapids; and is bordered by forests containing many species of valuable woods.

DOCETÆ, *do-sē'tē* [from the Gr. *dokeō*, I appear or seem]: in the early church, heretics who held that the human nature of Jesus Christ was a semblance and not a reality. The philosophers of polytheism, as well as of Judaism, has explained the appearances of divinities and of angels by holding that the assumption of bodies was only momentary, or in appearance. And when the Gnostic Christians found it impossible to conceive the essential union of the divine nature with a body of composed matter, since they held matter to be the seat of all evil, they had recourse to the same expedient. The difficulty was met in one of three ways: the body of Christ was either considered a real earthly body, but not belonging essentially to his nature, and only assumed for a time; or it was declared to be a mere appearance or illusion; or, finally, it was believed to be a heavenly body, composed of ethereal substance, though having the appearance of being material. All the Gnostic heretics held Docetism in one or other of these three forms, with the exception of those who were led by the same difficulty to deny the veritable divine nature of Jesus Christ, and reduce him to a mere human sage. Some of these alternative forms of heresy seem to have continued under various names, to the present time, though with no prominent or numerous following. For a clear and learned account of Docetism, consult Neander's *Dogmengeschichte* (History of Doctrine). English by J. E. Ryland; published by H. G. Bohn, 2 vols. 1858.

DOCIDIUM, n. *dŏ-sĭd'ĭ-ŭm* [Gr. *dokidion*, dim. of *dokos*, a beam, a shaft]: genus of *Desmidiaceæ*, having single cells.

DOCILE, a. *dŏs'ĭl* or *dō'sīl* [F. *docile*—from L. *docĭlĭs*, easily taught, apt to learn—from *docĕō*, I teach]: easily instructed; teachable; easily managed; tractable. DOCILITY, n. *dō-sĭl'ĭ-tĭ* [F. *docilité*]: readiness to learn; aptness to be taught.

DOCIMACY, n. *dŏs'ĭ-mă-sĭ* [Gr. *dokimăsĭă*, proving, trial—from *dokimāzō*, I try, I put to the proof]: the act or practice of assaying ores or metals. DOC'IMAS'TIC, a. *-măs'-tĭk*, relating to the assaying of ores or metals; proving by experiments. DOC'IMOL'OGY, n. *-mŏl'ŏ-jĭ* [Gr. *logos*, a discourse]: a treatise on the art of assaying metals, etc.

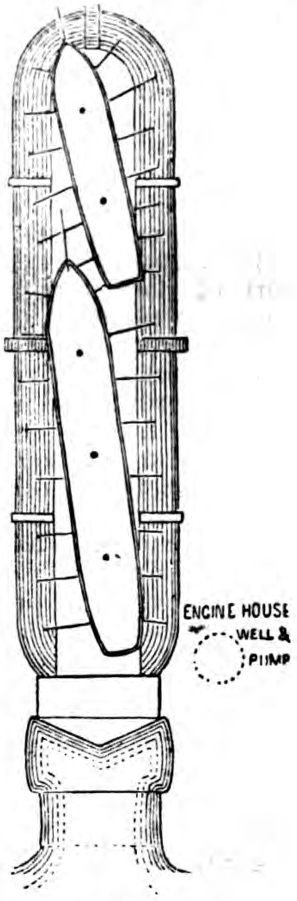
DOCK, v. *dŏk* [Ger. *docke*, a bundle, a bunch of thread. It. *tocco*, a scrap: W. *toc*, short or abrupt· Icel. *dockr*, a short stumpy tail]: to cut or lop off the end of a thing; to curtail; to shorten: N. the tail of a beast cut short; the solid part of the tail; a term applied to several plants having leaves broad in proportion to their length, as *sour-dock* or *sorrel*, *burdock*—several plants of the genus *Rumex*, ord. *Polygonăcĕæ*. DOCK'ING, imp. DOCKED, pp. *dŏkt*, clipped; cut off, as the end of a thing.

DOCK, n. *dŏk* [Flem. *docke*, a bird-cage: comp. Gael. *tog*, to lift]: the raised inclosure or box in which a criminal is placed at his trial.

DOCK (*Lapathum*): sub-genus of the genus *Rumex*, the other species of which are generally called SORREL (q.v.); containing those which are not acid, and of which the flowers are hermaphrodite. They are large perennial herbaceous plants, natives chiefly of temperate climates, with large generally lanceolate or ovate leaves, and panicles of small greenish flowers. They have great tap-roots, and are with difficulty eradicated from pastures. They also multiply rapidly by seed. The best mode of dealing with them, is generally found to be repeated cutting away of their leaves and shoots, by which the plants are killed. Many of the species prefer watery places. A number are natives of Britain, and several of the European ones have found their way to North America, where they have become troublesome weeds, a number of really indigenous species also being found there. Useless and even troublesome as the D. is generally esteemed, yet the large astringent roots are capable of being beneficially employed in medicine; and those of the great Water D. (*R. hydrolapathum*) in particular—for which the Druids entertained a superstitious veneration—are administered as an antiscorbutic. They are used also in rheumatism, and sometimes as a styptic, sometimes to form an astringent gargle, and sometimes as a dentifrice. *R. alpinus* is called MONK'S RHUBARB, and its root was formerly employed instead of rhubarb, but is less powerful. It is a native of the Alps.—The roots of docks have been sometimes used in dyeing, and give 'a great variety of shades, from straw-color to a pretty fine olive, and a fine deep-green to cloths which have been previously blued.'

DOCK, n. *dŏk* [old Dut. *dokke*, a harbor: Ger. *docke*, the tap to let the water of a fish-pond in or out: It. *doccia*, a mill-dam: mid. L. *doga*, a ditch, a canal]: an inclosed basin into which a ship may be lifted or placed for repairs; a large pond at the side of a river, or at its mouth, where the water is kept out by flood-gates till the ship is built or repaired; the water-way extending between two wharves. V. to place in a dock. DOCK'AGE, n. *-āj*, money paid for the use of a dock. DRY DOCK, that from which the water can be run off for the inspection of the bottoms of ships. WET DOCK, one always kept with a sufficient depth of water for the floating of ships. DOCKYARD, n. spaces and warehouses inclosed in a dock for naval stores, timber, etc.—Docks are of three kinds—wet or floating; tidal, properly called harbors or basins; and dry or graving. Wet Docks are for the purpose of maintaining a level nearly uniform with that of high water, so as to keep vessels always afloat, and to save them from rubbing up and down the quays with the rise and fall of the tide, and being sometimes too high and at other times too low for convenience in shipping or discharging cargoes.

Wet docks are generally surrounded by quay or wharf walls of masonry or brickwork, but where they are wanted chiefly for laying up vessels in, and not for loading or unloading, their margin is sometimes only a natural sloping beach. They are of most importance in places where there is a great rise and fall of tide, as at Bristol or Liverpool, where they are almost indispensable; while in the Clyde, where the tides are small, they have not long been erected, and are on a much more limited scale. Wet docks are generally entered by means of what is called a lock (see Lock), having two gates, in one leaf, or more frequently in two folding-leaves each, which enables vessels to enter or depart for a considerable time before and after high-water; but frequently, for the sake of economy both in space and in cost, they have only one gate, so that vessels can enter or depart only at or very near high-water, unless the water in the dock be run down considerably below that level. In most of the ports of the United States there is little occasion for inclosed docks, as the rise and fall of the tides is not sufficient to interfere with the convenience of loading and unloading at the wharves. The constructions here called docks, such as the Atlantic Docks in Brooklyn, are usually large basins, entered at all tides, and provided with all accommodations for loading and unloading great ships. They are properly tidal docks, but with water always sufficient to float any vessels that enter them.



Plan of Dry Dock.

The water in wet docks is sometimes kept, by means of pumping, permanently at as high a level as that of the highest tides, when a supply of pure water can he procured, to prevent the silting caused by the admission of any considerable body of turbid water by the gates, but that involves the necessity of locking up or down always except at the highest tides. The tendency to silt up by deposits of fine mud is of common occurrence, and dredging, or some other plan, must be resorted to for the purpose of keeping the dock reasonably clear. In almost all cases, wet docks require to be occasionally emptied for the purpose of cleaning.

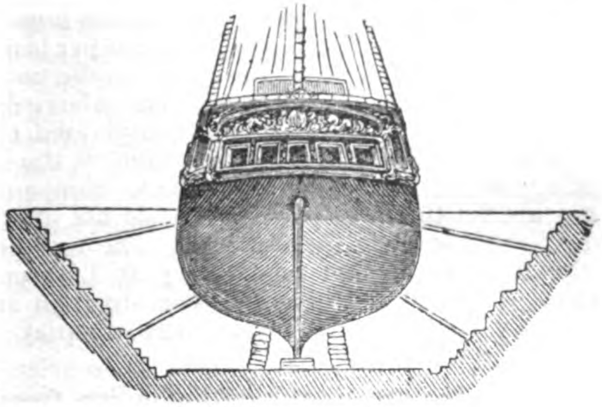
Dock-gates are generally opened and shut by means of chains worked by hand, either by winches or capstans; but of late years they have in many cases been moved by hydraulic machinery, as in England, at Great Grimsby, the Victoria Docks in the Thames, and Albert Dock, Leith.

Tidal docks require no particular description; they are merely basins surrounded by quay walls, and having open entrances permitting the free flow and ebb of the tide, as at Greenock and Troon, and they have the advantage of requiring no opening or shutting of gates. With small tides, they answer very well, and they are sometimes made deep enough to keep vessels afloat at low-water; but with tides of considerable range they are attended with the disadvantage of large vessels grounding at low water, and from the large volume of water, generally more or less turbid, which enters at every tide, they are much more liable to silt up than wet docks are. For ridding them of muddy deposits, the plan is sometimes resorted to of letting out a reserve of water with a sudden gush from an inclosure at the inner end, at the time the tide has receded. This is called scouring. Such is the process pursued at Boulogne and elsewhere.

The quays of wet and of tidal docks must have mooring-ports of rings to which vessels can make fast. They are generally provided with sheds to keep goods dry, with cranes (see HYDRAULIC CRANE) for shipping or unloading heavy articles, and with staiths or drops in the case of coal-shipping ports, and now they very frequently have rails laid along them.

Dry docks are used for the purpose of laying vessels dry for examination or repairs. They may have their entrance either from a wet dock or from a tidal harbor; but the former is much the better arrangement, as it admits of vessels being docked or taken out at any time of tide, and it keeps a more equal pressure on the gates, thereby making them less liable to leak. They require to be built of good water-tight masonry. The entrance has generally a pair of folding-gates pointing outwards, to exclude the water; but sometimes it is closed by means of a caisson—viz., a vessel shaped something like the hull of a small ship, and having a keel and two stems, which fit into a groove in the masonry. The caisson is sunk into the groove by admitting water into its interior, and is floated out again by pumping out the water. When the tides are very large, the bottom of the dock may sometimes be placed above low-water, so that it may be run dry without pumping; but generally the bottom of a dry dock for the reception of any but very small vessels is below that level, in which case a steam-engine and pumps, with a well and water-channels leading to it, are required for emptying the dock.

The floor is nearly level, and the keel of the vessel to be docked rests on wooden blocks fastened down to prevent them floating, and of such a height as to admit of the shipwrights going under the vessel's bottom. Side-shores are put in, to keep the vessel upright, and blocks are fitted in under the bilges as soon as possible after the water has been got out of the dock. The sides generally consist of stone steps called altars, for the purpose of fixing the lower ends of the shores, and also for the convenience of supporting the workmen's scaffolds. Dry docks are frequently made long enough to hold three or four vessels of considerable size at one time, in which case they are placed, not in the centre line of the dock, but obliquely across, to give more available length. One of the finest graving-docks in the world, though not of the largest size, is at the U. S. Navy Yard, Brooklyn. It is of granite and cost over $2,000,000. Its main chamber has a length at top of 307 ft.; breadth 98 ft.; length at bottom, 286 ft.; breadth 30 ft. It can be emptied by steam-pumps in two hours. Floating-docks are mostly used in the United States in the repair of vessels; they are sometimes built in sections. They serve their purpose, and are quite numerous, but lack permanence.



Section of Dry Dock.

The use of the graving dock is frequently superseded by that of Morton's patent-slip: see SLIP. Graving-docks of large dimensions are very expensive works, and the difficulty of making them water-tight is very great. In many cases, therefore, recourse is had to a pontoon or floating-dock, sometimes termed a 'camel.' See FLOATING-DOCK. The use of the floating-dock, together with the application of hydraulic pressure for the raising of ships, is to be seen at the 'Thames Graving-Dock,' where there are two rows of cast-iron columns, five ft. diameter, 16 in each row. The rows are 60 ft apart, and the practical working length is 350 ft Each column incloses a hydraulic press of 10 inches diameter, with a length of stroke of 25 ft. There are cross-heads on the top of each ram, from the ends of which cross-girders extend across the dock to the corresponding column on the opposite side, which girders form a large wrought-iron gridiron or platform, which is raised or lowered at pleasure with the vessel upon it. When a vessel is to be repaired, an open pontoon is selected to suit its dimensions, which is sunk in position to the bottom of the dock, and resting on the iron gridiron. After the vessel is floated over the pontoon, the whole is raised by the hydraulic presses, and the pontoon being emptied of water, sustains the weight of the vessel to be repaired, and is then floated away into some convenient part of the dockyard.

Liverpool has 20 graving-docks, many of them being 600 ft., and some 750 ft. in length. No docks in the world are on so grand a scale as those of London, Liverpool, and Birkenhead, which are of immense area, covering hundreds of acres. Surrounded with substantial stone quays, provided with gates, placed under a proper police, and otherwise managed in a costly manner, these, as well as nearly all other docks in Great Britain, require to be supported by rates levied from the vessels resorting to them; and for levying these rates, powers are taken in the acts of parliament authorizing the construction of the respective docks. Sometimes the dock dues or rates are imposed on vessels in bulk according to tonnage, and in other instances, the rates are so much per ton, according to the nature of the goods. The Liverpool dock receipts are above £1,000,000 a year. Generally, the dues are complained of as a heavy burden on commerce; but so enormous is the cost of constructing docks, that the joint-stock companies by which they are for the most part owned, do not often realize good returns for their investments. The rapid extension of the dock-system on the Mersey at Liverpool, is remarkable. The original old dock contained an area of 3 acres 1,200 yards, and 557 lineal yards of quay space. The total quay space is now above 22 miles.

DOCKET, or **DOQUET**, n. *dŏk'ĕt* [diminutive from ***dock***, to curtail: comp. W. *tocyn*, a slip, a ticket]: ticket or label, with written direction thereon, tied to goods; piece of paper or parchment containing the heads, or a summary, of any large writing; register of cases in a court; schedule of matters to be brought before a deliberative body: V. to mark their contents on the back of papers; to indorse; to form an abstract; to mark with a ticket. DOCK'ETING, imp. DOCK'ETED, pp.—All attestations or declarations annexed to written instruments are called dockets, particularly those done by a notary. The notarial D., formerly common to all solemn instruments, is said to be the most ancient example of fixed style in Europe. The attestation was in Latin.

DOCK WAR'RANTS, in England: orders or authorities for the removal of goods and merchandise warehoused in docks. The orders are granted by the proper officer at the docks, on application of the importer, in favor of any one whom the latter shall name.

DOCK'YARD BATTAL'IONS: before the establishment of volunteer corps, a special element in the British military service, intended chiefly for the defense of the royal dock-yards. They were formed 1847, comprising abt. 9,000 men, clerks, artisans, and laborers employed in the yards; and were abolished 1861.

DOCK-YARDS, ROYAL: spaces and warehouses inclosed in a dock for naval stores, with all appliances for ship-building, for the British navy. (See the titles of the several towns where they are situated.)

Most of the royal ships are built by the government, at one or other of the dock-yards at Portsmouth, Plymouth, Sheerness, Chatham, or Pembroke. Each of these establishments comprises covered slips on which the ships are built, docks in which they are kept, and all the appliances for rigging them out for sea. Boat-building and mast-making are also carried on; and in some, though not all of the yards, rope-making, sail-making, anchor-forging, block-making, and other manufacturing operations connected with the finishing and furnishing of ships. There are also arrangements connected with the storing of guns and other munitions of war. For naval repairs and refitting abroad, Britain maintains royal dock-yards at Gibraltar, Malta, Halifax, Bermuda, the Cape of Good Hope, Jamaica, Ascension, Trincomalee, and Hong-kong. Since the creation of a steam-navy, and the large substitution of iron for wood in ship-building, an increasing proportion of the royal ships are built in private yards. All the dock-yards are under the admiralty, and each is governed by a distinct set of officers responsible only to that department. The chief officer, called the superintendent, is generally an admiral, but sometimes only a captain; and the office is deemed an honorable recognition of past services.

In 1879-80, £1,355,000 was voted for the dock-yards at home and abroad, chiefly salaries and wages to artificers; exclusive of all materials, and are for the dock-yards only, as distinguished from the victualling yards; which latter cost £76,570. Severe strictures have been made from time to time upon the management of these establishments, and several committees have been appointed to investigate and to suggest reforms.

DOCTOR, n. *dŏk′tėr* [F. *docteur*—from L. *doctor*, a teacher, a doctor—from L. *docĕō*, I teach: Sp. *doctor*]: contracted into Dr.; the highest degree conferred by a university in divinity, law, medicine, music, or science; one who practices medicine; a physician; a learned man: V. *colloquially*, to apply medicines for the cure of diseases; to adulterate. DOC′TORAL, a. *-tŏr-ăl*, pertaining to a doctor. DOC′TORALLY, ad. *-lĭ*. DOC′TORATE, n. *-āt*, or DOC′TORSHIP, n. degree or rank of a doctor. DOC′TORING, n. in *familiar language*, the adulteration of liquors and articles of domestic consumption; the giving medicines to. DOC′TORLY, ad. *-lĭ*, like a learned man. DOC′TRESS, or DOC′TORESS, n. a woman who acts as a physician. TO DOCTOR ACCOUNTS, to falsify them. DOCTORS, in *slang*, false dice made to turn up certain winning numbers. DOCTORS′

COMMONS, the place where the doctors of the civil law formerly lived and ate *in common*—and, the official residences and offices of the judges of various courts, as the court of arches, the admiralty, etc.

DOCTOR: teacher. Originally, the word doctor was used, in accordance with its etymological derivation, to signify a teacher in general, and it was not till the 12th c. that it became a title of honor for the learned, irrespective of the function of communicating knowledge. It had frequently appended to it, in those early days, some additional expression intended to characterize the peculiar gift of its possessor. Thus, Thomas Aquinas was called the Doctor Angelicus; Bonaventura, the Doctor Seraphicus; Alexander de Hales, the Doctor Irrefragabilis; Duns Scotus, the Doctor Subtilis; Roger Bacon, the Doctor Mirabilis; William Occam, the Doctor Singularis; Gregory of Rimini, the Doctor Authenticus; Joseph Gerson, the Doctor Christianissimus; Thomas Bradwardine, the Doctor Profundus; and the like. The word had long been used, even in the universities, as a general expression for a teacher before it came to designate a degree or rank in the learned hierarchy to which only the united body of the teachers could advance or promote the candidate. These formal promotions commenced at Bologna in the 12th c., and the learned Irnerius, regenerator of the Roman law at that period, is said to have introduced the ceremonial afterward universally adopted. Irnerias, however, is a sort of mythical hero in university history, and such statements with regard to him must be received with caution. See PROMOTION. The Univ. of Paris almost immediately followed in the footsteps of Bologna, the first reception of doctors having taken place in 1145, in favor of Peter Lombard and Gilbert de la Porrée, the greatest theologians of the day. Subsequently to this period, the emperors were accustomed expressly to confer upon the universities the right of appointing doctors of laws by their authority and in their name. The example of the emperors was speedily followed by the popes, who conferred corresponding rights with reference to the canon law. From the 11th to the 13th c., there seems reason to believe that, both in Italy and in France, the terms master and doctor were nearly synonymous. In the German universities, the professors of theology were more commonly known as masters; and in the beginning of the 15th c., in accordance with the practice of the Univ. of Prague, the distinction was consistently made between doctors of law and medicine, and masters of theology and philosophy. In modern times, the title of Doctor has been applied almost everywhere to the three faculties of Theology, Law, and Medicine. In Germany, as also to some extent in the United States, it extends to that of philosophy, in which, in Great Britain, the older title of master is still retained. The doctor's degree is, in general, conferred at the instance of the dean of the faculty to which it appertains. It is granted either on examination, and after the ancient form, at least, of publicly defending a learned thesis in Latin has been observed, or else it is an honorary degree, conferred in consideration of the general reputation of the recipient for eminence in some particular branch of learning, philosophy, or science. See DEGREE. In Germany, the doctor ranks before the untitled nobility and next to the knight; and among themselves, doctors take the rank of the faculties to which they respectively belong, the first being theology, the second law, and the third medicine. In Oxford and Cambridge, and recently also in the German universities, and in some American colleges, doctors of music have beeen created. In Germany, learned ladies have occasionally shared the honors of the doctorate. Dorothea Schlözer received the degree of doctor of philosophy from the Univ. of Göttingen, 1787; Mariane Charlotte von Siebold, that of medicine from Giessen, 1817; and Johanna Wittenbach, in philosophy, from Marburg, 1827. Of the four ancient degrees of Bachelor (q.v.), Master of Arts (q.v.), Licentiate (q.v.), and Doctor, the modern Univ. of France has retained only those of bachelor, licentiate and doctor. Until the revolution the highest consideration attached to the title of Doctor of the Sorbonne (q.v.)—that famous theological faculty, which was called 'the perpetual council of the Gallican church,' and of which the present faculty of theology of the Acad. of Paris is but a lifeless reproduction. But though the degrees of Sorbonne continued to receive, and apparently to merit, some degree of respect, not so was it with those of the other schools of learning in France. Furrettière, in his Dictionary, defines a bachelor as a man who learns, and a doctor as a man who forgets. The ridicule of Voltaire, La Fontaine, Le Sage with his Doctor Sangrado, and Molière in the *Malade Imaginaire*, will readily occur to our readers as illustrating the position which was then held very generally by French doctors.

In England, the doctor's degree was not introduced into the universities till the reign of John or of Henry III. At first it was a very rare and highly prized honor, and the ceremony of conferring it was attended by scenes of feasting and revelry, of which curious accounts will be found in Antony à Wood's *History and Antiquities of the University of Oxford.* Colored engravings of the dresses worn by doctors of the several faculties at Oxford and Cambridge are given in Ackermann's Histories of these Universities. As to professional uses of the degree of Doctor of Civil Law, see DOCTORS COMMONS.

DOCTORS COMMONS: formerly the college of the doctors of civil law in London, wherein the court of admiralty and the principal ecclesiastical courts were held. It was founded by Dr. Henry Harvey, Dean of the Arches, previous to which time the doctors had lived in Paternoster Row. The original building was burned in the great fire in 1666, when the doctors removed for a time to Exeter House. After some time the Commons was rebuilt, and the doctors returned to their former quarters. The courts which had been wont to hold their sittings at Doctors Commons are—the court of arches, the archdeacon's court, the prerogative court, the faculty court, the court of delegates, and the court of admiralty. The prerogative court, the court of delegates, the court of arches, the archdeacon's court, the faculty court, and the court of admiralty, have been changed, and no longer continue to exercise their functions in this once famous spot. The court of arches (so called from having sat in *Arcubus*, or under the arches or bows of Bow Church, Cheapside) is the court of appeal belonging to the abp. of Canterbury. The judge in this court is styled dean of the arches, and he has jurisdiction, as the abp.'s principal official, in all ecclesiastical causes within the province of Canterbury. The archdeacon's court is an inferior court for the consideration of ecclesiratical questions occurring within the archdeaconry, For an account of other courts mentioned in this article, see their titles. The practitioners in the several courts to which we have alluded were the doctors of civil law, called in the ecclesiastical courts advocates and proctors, who performed similar duties to those of attorneys or solicitors in the courts of law and equity. Both classes of practitioners required, in order to their admission to practice, to obtain the fiat of the archbishop; and afterward to be duly admitted by the dean of the arches. The form of admission was in both cases attended with much ceremony. The doctor elect was introduced to the presiding judge by two doctors habited in their scarlet robes, The candidate then made a short Latin speech, and was admitted to practice in the courts. The habit of the doctors is a scarlet robe with a hood, trimmed with taffeta or white minever. The proctors were, in like manner, introduced by two senior proctors. In 1857 power was given by an act to dissolve the College of Doctors Commons and sell the property. The proctors received compensation, and all solicitors were allowed to act as proctors, and all proctors were turned into solicitors, all being alike solicitors of the supreme court. Nevertheless the old names continue, and will no doubt only by degrees cease to be used in reference to ecclesiastical court and proceedings. For a full acount of Doctors Commons, see Stowe's *London*.

DOCTRINAIRE, n. *dŏk'trĭ-när'*]F. a theorist—from L. *doctrīna*, instruction (see DOCTRINE)]: a propounder of a set of opinions; a dogmatic or political theorist: ADJ. of or pertaining to dogmatic theories. Doctrinaire signifies, properly, the scientific taking up and exposition of a subject, as opposed to a treatment superficial and resting on accidental characteristics. In general, however, it is used as a term of reproach, to characterize views which are deemed pedantic, unbalanced, theoretic, and unpractical. In this sense it was applied in France, during the Restoration, by the reactionary court party to the fraction of the parliamentary opposition, who supported scientific doctrines of constitutional liberty against the arbitrary will of the monarch. The party thus termed Doctrinaires, had its rallying-point in the salons of the Duc de Broglie, was led in the chamber by Royer Collard, and supported in the press and before the public by Guizot, and the younger members of what afterward became the Orleans party. The development of the constitution on the basis of the *charte* of Louis XVIII., was the watchword of those men; but their real inspiration was derived from England. When the revolution of 1830 occurred, they became the advisers and ministers of the king of the French, and were more deeply imbued with the principles of constitutional monarchy than any other political party that has ever existed in France. The true leaders of the *doctrinaires* were Mounier, Lally Tollendal, Clermont Tonnerre, Talleyrand, and the Abbé Montesquiou; and the cradle of the party was the original *comité* of the constitution, which, about 25 years before, elaborated the *charte* of 1814. Its later representatives found a centre in the court of the exiled Queen Marie Amalie at Claremont, and a vigorous supporter in her gifted son, the Duc d'Aumale.

DOCTRINE, n. *dŏk'trĭn* [F. *doctrine*—from L. *doctrīna*, instruction, learning—from *docĕō*, I teach: It. *dottrina*]: whatever is taught; a principle or position laid down by a teacher; any tenet or dogma; one of the truths of the Gospel: see Dogma. Doctrinal, a. *dŏk'trĭ-năl* [F.—L.]: pertaining to or containing doctrine. Doc'trinally, ad. *-lĭ*.—Syn. of 'doctrine': dogma; tenet; principle; precept; maxim; instruction; erudition.

DOCUMENT, n. *dŏk'ū-mĕnt* [F. *document*—from L. *docŭmen'tum*, an example, a lesson—from *docĕō*, I teach: It. *documento*]: any paper containing written instructions or proofs for information, etc.; written evidence; record. Doc'umen'tary, a. *-mĕn'tėr-ĭ*, of or relating to written instructions or evidence; also Doc'umen'tal, a.

DODD, *dŏd*, William, LL.D.: 1729–1777, July 27; b. Bourne, in Lincolnshire, England. He educated first at a private school; and was admitted, 1745, as a sizar to Clare College, Cambridge, where, after five years of study, he took his degree B.A. He went to London, received orders from the bishop of that city, and soon gained reputation as a popular preacher and successful littérateur. Through his celebrity as a divine and man of letters, and by flattering persons in high position, he prospered in London, and in 1763, was appointed tutor to Philip Stanhope, fifth Earl of Chesterfield. D.'s habits, however, were very expensive, and an income of £800 per annum, augmented by the produce of his literary labors, was inadequate. His extravagance brought his ruin He forged the signature of his former pupil, the Earl of Chesterfield, to a bond for £4,200. For this crime he was arrested, 1777 Feb., and though he refunded the money, he was sentenced to death, which sentence was executed. His writings are numerous and varied. His *Beauties of Shakespeare* (2 vols. Lond. 1753) is well known, as are also his *Reflections on Death* (1763), and *Thoughts on Death*, a poem composed during his imprisonment before the execution.

DODDART, n. *dŏd'ėrt:* a game played by two sides with bent sticks and a ball, similar to hockey (q.v.); the bent stick or club used in the game.

DODECADACTYLON, n. *dō-dĕk-a-dăk'tĭl-ŏn* [Gr. *dōdeka*, twelve; *daktulos*, a finger]: the upper extremity of the small intestines; the duodenum, so called because it is 12 finger-breadths long.

DODECAGON, n. *dō-dĕk'ă-gŏn* [Gr. *dōdĕkă*, twelve; *gōnĭă*, a corner or angle]: a figure having twelve equal sides and angles: see REGULAR PLANE FIGURES.

DODECAGYNIAN, a. *dō'dĕk-ă-jĭn'ĭ-ăn* [Gr. *dōdĕkă*, twelve; *gŭnē*, a female]: pertaining to an order of plants, the DO'DECAGYN'IA, n. *-ĭ-ă*, having twelve pistils or styles.

DODECAHEDRON, n. *dō'dĕk-ă-hē'drŏn* [Gr. *dōdĕkă*, twelve; *hĕdra*, a base]: one of the five regular solids; it is bounded by 12 equal and regular pentagons: see REGULAR PLANE FIGURES. DO'DECAHE'DRAL, a. *-hē'drăl*, consisting of 12 equal sides or bases.

DODECANDRIAN, a. *dō'dĕk-ăn'drĭ-ăn*, or DO'DECAN'DROUS, a. *-drŭs* [Gr. *dōdĕkă*, twelve: *anēr* or *andra*, a male]: pertaining to a class of plants, the DO'DECAN'DRIA, n. *-drĭ-ă*, having 12 stamens.

DODECANE, n. *dō'dĕ-kān* [Gr. *dōdĕkă*, twelve]: in *chem.*, a hydrocarbon of the paraffine group, containing 12 atoms of carbon.

DODECARCHY, n. *dō'dĕk-âr'kĭ* [Gr. *dōdĕkă*, twelve; *archē*, rule, government]: a government by 12.

DODECASTYLE, n. *dō-dĕk'ă-stīl* [Gr. *dōdĕkă*, twelve; *stulos*, a column]: in *arch.*, a portico having 12 columns in front.

DODECASYLLABLE, n. [Gr. *dōdeka*, twelve; Eng. *syllable*]: a word of 12 syllables.

DODECATEMORY, n. *dō'dĕk-ă-tĕm'ėr-ĭ* [Gr. *dōdĕkătos*, twelfth; *morĭŏn*, a part]: in *astrol.*, a term applied to the twelve houses or parts of the zodiac of the primum mobile, *prī'mŭm mō'bĭ lē*, to distinguish them from the 12 signs.

DODDER, n. *dŏd'-dėr* [Ger. *dotter*], (*Cuscuta*): genus of plants referred by some botanists to the nat. ord. *Convolvulaceæ;* regarded by others as the type of a small distinct nat. ord., *Cuscutaceæ;* which differs from *Convolvulaceæ* in the habit of the plants which are leafless climbing parasites with flowers in dense clusters; in having scales on the tube of the corolla alternate with its segments; and in having a spiral thread-like embryo, lying in a mass of fleshy albumen, while the cotyledons are so small that the embryo has been described as destitute of them. There are about 50 known species of *Cuscutaceæ*, found chiefly in the warmer temperate parts of the globe. The name D. is often extended to all of them. One or two species of *Cuscuta* are natives of Britain, parasitic on leguminous plants, heath, thyme, hops, nettles, etc. A species of D. is very injurious to crops of flax in Germany, and leguminous crops often suffer from this cause in the south of Europe. The seed of D. germinates in the ground, but the stem soon seeks to attach itself to plants by little rootlets which its sends out, and the original root dies. The appearance of D. has been described as resembling ' fine, closely tangled, wet catgut.' **Dod'dered**, a. *-dėrd*, overgrown with dodder.

Flax Fodder (*Cuscuta Epilinum*).

DODDRIDGE, *dŏd'rĭj*, Philip, D D.: 1702–1751, Oct 26; b. London: eminent English Independent minister and author. He was educated for the ministry at a theological acad. at Kibworth, Leicestershire, presided over by John Jennings. In 1722, he became pastor of the Independent congregation at Kibworth, and in 1729 received a call to Northampton, where he also became president of the theological acad. removed from Kibworth. Here he continued to preach and train young students for the ministry till near the time of his death at Lisbon, whither he had gone for the benefit of his health. D. was a man of the most amiable character, deep piety, and extensive accomplishments. His principal work is *The Rise and Progress of Religion in the Soul* (1750). It has been translated into Dutch, German, Danish, and French. Among his works were *The Family Expositor* (6 vols. 1760–62); *Course of Lectures*, to the students under his charge, published by the Rev. Samuel Clarke (1763); and a great variety of sermons on miscellaneous religious topics. D. wrote a considerable number of hymns, which have been widely used among English and Scotch dissenters.

DÖDERLEIN, *dö'dėr-līn*, Ludwig: 1791, Dec. 19–1863; b. Jena: German philologist. He studied at Munich, Heidelberg, Erlangen, and Berlin; and in 1815 was appointed prof. of philology at the acad. of Berne. About 1820, he went to Erlangen as second prof. of philology, and in 1827 became first prof., also director of the philological seminary. His principal works are *Lateinische Synonymen und*

Etymologien (6 vols. Leip. 1826–38); *Lateinische Wortbildung* (Leip. 1838); *Handbuch der Lat. Etymologie* (Leip. 1841); *Homerisches Glossarium* (3 vols. 1850-58). D. also edited several classical works, such as the *Œdipus Coloneus* of Sophocles, and the *Opera* of Tacitus.

DODGE, n. *dŏj* [imitative of the sound of a lump of a moist soft substance thrown on the ground, then the jerk with which it is thrown: Bav. *dotsch*, a mass of something soft: Scot. *dod*, to jog: comp. Gael. *doigh*, method, manner —from *doid*, the hand]: a low trick; a shifty contrivance; a quibble; a ruse; an evasion: V. to follow in the track of any one in his ins and outs; to shift place by a sudden start; to deceive one by change of motion; to be evasive; to quibble. **Dodg'ing**, imp. **Dodged**, pp. *dŏjd*. **Dodg'er**, n. one who dodges or evades; a young thief.

DODGE, *dŏj*, **Grenville Mellen**: b. Danvers, Mass., 1831, Apr. 12: soldier and engineer. He graduated at the Norwich (Vt.) Milit. Acad. 1850; removed to Ill. 1851, and followed railroad surveying there till 1854; and was similarly engaged in the far west till the beginning of the civil war. He declined a commission of capt. in the regular army, raised the 4th Io. regt. and took the field as its col. 1861, June. He served with Fremont in Mo.; commanded a brigade in the army of the south-west and one on the extreme right at the battle of Pea Ridge, where three horses were killed under him, and he received several wounds; was promoted brig.gen. 1862, Mar., and assigned to command the dist. of the Mississippi; distinguished himself at Corinth during the Vicksburg campaign, at Sugar Valley and Resaca; was promoted maj.gen. of vols. 1864, June; commanded the 16th army corps in the Ga. campaign; repulsed a whole Confederate army corps with 11 regts. at Atlanta 1864, July 22; was wounded in the siege of the city; and succeeded Gen. William S. Rosecrans in the command of the dept. of the Mo. In 1865 he was engaged in campaigns against hostile Indians, 1866 resigned from the army and became chief engineer of the Union Pacific railroad, and on the completion of that road, 1869, resigned to accept similar service on the Tex. Pacific road. He has since been engaged in railroad construction in the United States and Mexico. He served as a member of congress from Io. as a republican 1867-69, and as a delegate to the republican convention at Chicago 1868, and Cincinnati 1876.

DODGE, **Mary Abigail** (**Gail Hamilton**): b. Hamilton, Mass., abt. 1830. She began teaching school at an early age, became instructor in physical science in the Hartford High School, and while a member of the family of Dr. Gamaliel Bailey, of Washington, owner of the *National Era*, began her newspaper career with contributions to that publication, subsequently adding to her list the *Congregationalist*, *Independent*, New York *Tribune*, and *Atlantic Monthly*. Writing under a pseudonym composed of an abbreviation of her second name and the place of her birth, the freshness, crispness, and force of her varied contributions attracted early and wide attention. She was one of the editors of the Boston juvenile, *Our Young Folks,* 1865-67, and wrote a series of notable letters on civil service reform for the *Tribune* 1877. Her published works are numerous and include *Country Living and Country Thinking* (1862), *Gala Days* (1863), *Stumbling Blocks* (1864), *Wool Gathering* (1867), *Woman's Wrongs: a Counter-Irritant* (1868), *Battle of the Books* (1870), *Woman's Worth and Worthlessness* (1871), *Sermons to the Clergy* (1875), *What Think Ye of Christ?* (1876), *Our Common School System* (1880), *Divine Guidance: Memorial of Allen W. Dodge* (1881), *The Insuppressible Book* (1885).

DODGE, Mary Mapes: daughter of Prof. James J. Mapes: b. New York, 1838: author. She was educated privately, married to William D., lawyer of New York, and was left a widow with two children. Turning her attention to literature she wrote a number of short tales and published them under the title of *The Irvington Stories* 1864. This work met such success that she was urged to prepare another immediately; and, 1866, brought out *Hans Brinker, or the Silver Skates,* reprinted London 1867. Then followed *A Few Friends* (1870), *Rhymes and Jingles for Young Folks* (1874), *Theophilus and Others,* essays (1876), *Along the Way,* poems (1879), *Donald and Dorothy, a Story of American Life* (London 1883; New York 1884): all of which excepting *The Irvington Stories* and *A Few Friends,* out of print, are still published and have large sales. She was one of the first editors of *Hearth and Home,* and conducted the children's dept. several years, and since 1873 has been editor of *St. Nicholas,* the illustrated magazine for children.

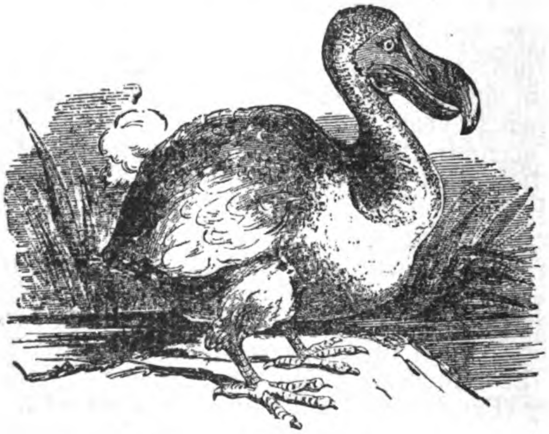
DODGE, William Earl: 1805, Sep. 4—1883, Feb. 9; b. Hartford: merchant. He received a common-school education, entered a wholesale dry-goods store in New York when 13 years old, conducted the same business on his own account 1826-33, married a daughter of Anson G. Phelps, became a member of the firm of Phelps, Dodge & Co., and remained at the head of the firm till 1879. He was delegate to the peace convention 1861, member of congress as a republican and served on the committee on foreign affairs 1866-7, member of the Indian commission, three times pres. of the New York Chamber of Commerce, a founder of the Union League Club of New York, vice-pres. of the American Bible Soc., trustee of Union Theol. Seminary (Presb.), and actively connected with a number of temperance, religious, and charitable institutions, to several of which he made liberal bequests.

DODIPATE, n. *dŏd'ĭ-pāt* [probably from Eng. *dote,* and *pate,* the head]: a blockhead; a numskull.

DODKIN, n. *dŏd'kĭn* [Dut. *duitkin,* dim. of *duit,* a doit]: a little doit; a small coin.

DODO, n. *dō'dō* [Port. *doudo,* silly, foolish: Dut. *dodaers* —from *dodoor,* a sluggard], (*Didus*): large bird, formerly ranked among the *Brevipennes* (with the Ostrich, etc.), now commonly placed in a sub-family of the *Columbidæ* (Pigeons), though exhibiting very anomalous peculiarities;

but still more interesting because, while it appears to be now completely extinct, its extinction was very recent, and through the agency of man. The D. (*D. ineptus*) was the only species of its genus, and is known to have existed within 200 years. It is described by several voyagers of the 16th and 17th c., and seems even to have been brought alive to Europe. It was entirely confined to he island of Mauritius; the Solitaire (*Pezophaps solitaria*) of Rodriguez, also extinct, being a very different bird. The D., according to the descriptions given of it by those who saw it, and which are confirmed by pictorial representations, apparently worthy of confidence, was a bird larger than a swan; of a very heavy, clumsy form and corresponding gait, with short thick scale-covered legs; three rather short toes before and one behind; large head; very large bill, the upper mandible longer than the under, and much hooked at the point; the wings so short as to be of no use for flight, and furnished only with a few black feathers; the general plumage a kind of grayish-down; the tail merely a tuft or bunch of curiously curled feathers. The D. was so abundant in Mauritius, that the discoverers of that island, 1598, became satiated with its flesh, though they describe it, particularly the breast, as good for food. The birds were easily killed, being wholly unable to fly, and running slowly. Their speedy extinction after the island began to be visited and settled, is thus accounted for. The D. seems to have been adapted for living in tropical woods, where the luxuriant vegetation afforded it a ready supply of food, and its powerful hooked bill, which has led some naturalists to assign it a place among birds of prey, was probably intended for tearing vegetable and not animal substances. However singular this bill is in a struthious bird, it has been well remarked that it is not more so than the very different bill of the *apteryx*.



Supposed figure of the Dodo.

There are rude figures of the D. in several works of the 17th c., and in particular one, evidently superior to the rest, in Bontius (edited by Piso, 1658)—who calls the bird *Dronte* or *Dodaers*—which perfectly corresponds with the descriptions given of it, with a painting preserved in the British Museum, said to have been drawn in Holland from the living bird, and with a representation of it discovered by Prof. Owen 1838, in Savery's picture of *Orpheus and the Beasts at the Hague*, which he thinks 'must have been copied from a study of the living bird.' The skeleton has been partially reconstructed, and described by Prof. Owen. Many bones of this extinct bird were discovered 1865, when extensive marshes in the island were partially drained. There are bones at Paris, Copenhagen, and Haarlem. A foot of the D. is among the valued treasures of the British Museum. In the Ashmolean Museum at Oxford are a head and foot; but the stuffed specimen formerly there was allowed to decay, and finally destroyed 1755 by order of the curators.

DODONA, *dō-dō′nâ:* city of Epirus, seat of the oldest Grecian oracle there; in one of the wildest districts s.w. of the Lake of Janina. The Greek and Egyptian accounts of its origin differ. The priests of Jupiter in Egyptian Thebes related that two holy women were carried off from that city by a party of Phœnicians, one of whom was sold in Libya, the other to the Greeks, and that these women founded the oracles at D. and Ammon. The inhabitants of D. related that two black doves took their flight from the city of Thebes, in Egypt, one of which flew to Libya, the other to D.; that the latter perched upon an oak, and with a human voice commanded that an oracle should be founded on the spot. Herodotus is of the opinion, that if the Phœnicians did actually carry off the two women already alluded to, one of them was probably sold into Greece; that the strange language and dark complexion had caused them to be likened to birds; and that when they became acquainted with the Greek tongue, they were said to have spoken with a human voice. Later authors ascribe the founding of the city to Deucalion. The sanctuary itself was dedicated to Jupiter, who manifested himself from the boughs of an oak, probably by the noise of the wind through the tree. This was explained by the priests, who were termed Selloi or Helloi. The goddess Dione, by some said to be Aphrodite, by others Hera, afterward appeared by the side of Jupiter, and the place of the priests was occupied by priestesses, who announced the will of the deity. D., though not equal in renown to Delphi, was yet frequently consulted on occasions of importance by the Spartans and Athenians. Though the city of D. was destroyed B.C. 219, by the Ætolians, it recovered at a later period, and was in existence in the 6th c. See *Dodone et ses Ruines*, by Carapanos (1878).

DODONÆA, *dŏd-o-nē′a* [named after *Dodonæus*, i.e., after Rembert Dodoens, a Belgian botanist and physician, who died A.D. 1585]: genus of *Sapindaceæ*, type of the tribe *Dodoneæ*. The whole plant is viscous and aromatic; locality: Australia without the tropics, and more rarely other hot countries. The leaves of *Dodonea viscosa* are used in baths and fomentations. DODONE'Æ, -ē, tribe of *Sapindaceæ*.

DODRANS, n. *dō'drănz* [L. *dequadrans* (*lit.*, less by one-fourth), three fourths—from *de*, away, and *quadrans*, a fourth part]: nine-twelfths or three-quarters of a Roman *as;* three-quarters of a foot; nine inches, or about a span.

DODSLEY, *dŏdz'lĭ*, ROBERT: 1703–64; b. near Mansfield, in Nottingham, England: author and publisher. His father, said to have been a schoolmaster, apprenticed him to a stocking-weaver; but D. ran away, and was afterward engaged as footman. While thus employed, he devoted his leisure moments to reading and the cultivation of letters, and eventually published, 1732, a volume of poems, entitled *The Muse in Livery, or the Footman's Miscellany.* His next production, *The Toy Shop*, a dramatic piece, was submitted in manuscript to Pope, who undertook to recommend it to Rich, manager of Covent Garden Theatre. It was acted under Rich's management in 1735 with great success. The proceeds resulting from the publication of these his first two works enabled D. to commence business as a bookseller, in which trade he was very successful. In 1737, his *King and the Miller of Mansfield* was brought out at Drury Lane, with an enthusiastic reception. This was followed by *Sir John Cockle at Court, The Blind Beggar of Bethnal Green*, and *Rex et Pontifex*, republished in a collected edition of his dramatic works with the title of *Trifles* (1748). Meantime, he was conducting his business with such ability and spirit, that in the course of three years after beginning he was in a position to buy copyrights. In 1738, he bought Johnson's *London*, giving for it no more than ten guineas. His most successful work was a tragedy called *Cleone*, acted at Covent Garden with extraordinary success. On its publication, 2,000 copies were sold the first day, and within the year the work ran through four editions. With *Cleone* he ended his dramatic authorship. D. was connected as either contributor or publisher, occasionally as both, with several magazines. He is now remembered chiefly for his *Select Collection of Old Plays* (12 vols. 8vo, 1780); and his *Collection of Poems by Several Hands* (4 vols. 12mo, 1748). Besides *Trifles*, another volume of his collected works was published 1772 under the title of *Miscellanies.*—See Knight's *Shadows of the Old Booksellers* (1865).

DOD'WELL, EDWARD: 1767–1832, May 14; b. England: artist. He received a collegiate education, and from 1800 till his death passed the most of his time travelling on the continent of Europe. His principal publications are *A Classical and Topographical Tour through Greece during the Years* 1801, 1805, *and* 1806, superbly illustrated, 2 vols. 4to (1818), and *Thirty Views in Greece* (1821). He also left drawings of a work on *Cyclopean or Pelasgic Remains in Greece and Italy*, published after his death.

DODWELL, HENRY: 1641–1711, June 7; b. Dublin: chronologist. He graduated at Trinity College, Dublin, removed to London 1674, became an author and critic, and

Camden prof. of history at Oxford 1688. He was a prolific writer, and published *Annals of Thucydides and Xenophon* (1696), *Annotations on the Greek Geographers, Dissertations on the Ancient Cycles of the Greeks and Romans* (1701), and a discourse in which he claimed to prove from the Scriptures and the first fathers that the soul is naturally mortal, and that since the apostles none but the bishops have the power of giving immortality (1706).

DOE, n. *dō* [L. *dama;* Ger. *dam;* AS. *da;* Dan. *daa*, fallow deer: It. *daino*, the female of the same kind]: a female of the fallow deer, also of the rabbit—the male is called a *buck*. Doe-skin, leather prepared from the skin of a doe; a stout tweeled woolen cloth.

DOE, *dō*, John: former fictitious plaintiff in ejectment, whose services are dispensed with since the abolition of the fiction: See Ejectment.

DOER, n. *dō'ėr:* one who performs, obeys, or practices. Does, v. *dŭz:* see under Do.

DOESBORGH, *dôs'burch* (*Drususburgt*): town in the Netherlands, province of Gelderland, 11 m. e.n.e. from Arnhem, on the right bank of the Yssel. It was formerly fortified, but the walls have been broken down, planted with trees, and formed into pleasant promenades. An intrenched camp has been constructed on the n.e. side, between the Yssel and Old Yssel, which here unite. The streets are broad, and many of the houses handsome. There are several benevolent institutions, a grammar-school, boarding-schools for boys and girls, and good public schools. The trade is considerable. Ship-building, book-printing, the making of Eau de Cologne, preparing mustard, etc , are carried on. Pop. 5,000.

DOFF, v. *dŏf* [contraction of *do off*—opposite of Don, *do on*]: to divest; to strip; to put off; to take off, as the hat. Dof'fing, imp. Doffed, pp. *dŏft*. Dof'fer, n. a revolving cylinder in a carding machine, which doffs, or strips off, the cotton from the cards: see Carding.

DOG, n. *dŏg* [Icel. *doggr;* Dut. *dogghe,* a large dog]: a well-known domestic animal; the male of certain animals, as the fox; applied to a man, in reproach; an iron bar with a sharp fang, used to fasten a log of timber; an andiron (q.v.); a name applied to various tools, pieces of machinery, etc., having a curve like the neck of a dog: V. to follow insidiously; to follow on the track vindictively; to hunt or follow closely for a particular purpose. DOG'GING, imp. DOGGED, pp. *dŏgd.* DOG'GISH, a. *-ĭsh,* churlish; like a dog; brutal. DOG'GISHNESS, n. DOGGED, a. *dŏg'gĕd,* sour; surly; sullen; sullenly obstinate. DOG'GEDLY, ad. *-lĭ.* DOG'GEDNESS, n. *-nĕs,* sullen determination. TO THROW TO THE DOGS, to throw away as useless. TO GO TO THE DOGS, to go to ruin. DOG-BEE, a fly troublesome to dogs; a male bee. DOG-BELT, in *coal-mining,* a term applied to a belt of strong, broad leather, worn round the waist, to which a chain is attached for the purpose of drawing the dans or sledges in the lower workings. DOGBERRY, the berry of the dogwood; the cornel; *Cornus sanguĭnĕă,* etc., ord. *Cornācĕæ.* DOG-CART, a light open carriage having a box at the back for dogs, but extensively used for other purposes. DOG-BRIER, the dog-rose; the *Rōsă cănīnă,* ord. *Rosācĕæ.* DOG CHEAP [may be a corruption of OE. *god chepe,* good bargain: prov. Sw. *dog,* very: Low Ger. *döger,* very much]: very cheap; cheap as dog's meat. DOG-DAYS, the part of the summer from about the beginning of July to the middle of August—originally applied to the time during which Sirius or the Dog-star was above the horizon with the sun (see CANICULAR DAYS). DOG-FLY, a species of fly infesting woods and bushes. It is extremely voracious, and its bite is very sharp and especially annoying to dogs. DOG-GRASS, a wild plant, about two ft. high, with straight stem, creeping root, and leaves soft and green; also called couch-grass (q.v.), quitch-grass, knob-grass, or dog-wheat; *Trĭtĭcum rĕpĕns,* ord. *Gramĭnĕæ.* DOG-LOUSE, the *Hæmotopinus piliferus,* a parasitical insect that infests dogs. It is of an ashy-gray color. DOG-LATIN, a corrupt or barbarous Latin. DOG-ROSE, a species of wild rose, the fruit having the name of DOG-HIP; same as DOG-BRIER. DOG-SHORES, the short pieces of timber by which a ship on the building-slip is supported: see SHORE 2. DOG'S-EAR, the corner of the leaf in a book turned down. DOG'S-EARED, folded down, as the corners of the leaves of a book. DOG-STAR, the bright star called *Sirius,* whose rising and setting at the same time as the sun gave name to the dog-days. DOG-WATCH, among sailors, a watch of two hours; usually the two watches from 4–6 and 6–8, P.M. DOG-HOLE, a place fit only for dogs. DOG'S-MEAT, refuse food; offal. DOG-TEETH, the canines or sharp-pointed human teeth growing between the fore teeth or incisors and the grinders. A BARKING DOG WILL NOT BITE, wild dogs do not bark, and the barking of domestic dogs indicates more noise than danger. DOG IN THE MANGER, an ill-natured, churlish person, who will not allow the use of a thing to another which is useless to himself. *Note.*—DOG and DOGGED, 'to follow on the track vindictively,' is said to come from the root of the Gael. word *doganta,* 'fierce, mo-rose, thick-set,' and was bestowed originally on bull-dogs and others of the fiercest kinds: Gael. *dog*, 'coarse, thick.'—Dr. C. Mackay.

DOG, *dŏg* (*Canis*): genus of digitigrade (q.v.) carnivorous (q.v.) quadrupeds, which, as defined by Linnæus, included all that now form the family *Canidæ* (q.v.), also hyenas. In the genus as now restricted, wolves and jackals are generally included by naturalists, with those animals to which alone the name Dog is popularly applied; and a distinctive character of principal importance is found in the pupil of the eye, which is always round—contracting circularly, while in foxes it assumes the form of a section of a lens when contracted. For wolves and jackals, see those titles: see also titles of the more important particular kinds of dogs.

At the very outset we encounter one of the most perplexing and difficult questions in natural history, as to the number of *species* of dog, and the origin of the domestic dog; two questions in appearance but one in reality, and one on which the opinions of the most eminent naturalists are divided. According to some, all domestic dogs are to be regarded as of one species; and as in the case of some other valuable domestic animals, that species is not certainly known to exist in a truly wild state, all the wild dogs which must be admitted to belong to the same species being viewed as the offspring of domestic dogs which have returned to a wild state, and in which, however, it is supposed that the original type or characteristics of the species, modified by domestication, have in a great measure reappeared. According to others, there are numerous species of dog, originally distinct, which have been domesticated by the inhabitants of different countries, but which, however, are very nearly related not only in their physical characters but in their dispositions and in some of their principal instincts, and which were capable of intermixing, not perhaps indiscriminately, but within certain limits, and so as to produce new races. By some who hold the first of these opinions, it is maintained further that the wolf and the dog are one species, and that all domestic dogs are derived from the wolf; while others advocate the jackal as their original parent and type. By some of those who hold the species to be numerous, it is supposed not improbable that the blood of wolves and of jackals may be mixed in some of the domestic races with that of the original dogs.

It is admitted on all hands, that there is great diversity among the different kinds of domestic dogs, many distinct races having long existed, which differ not only in size and other physical characters, but to a notable extent also in dispositions and instincts; it is admitted further that there appear no definite limits to the possible intermixture of these races with each other. So great is the diversity of physical characters, that naturalists of the greatest eminence almost acknowledge themselves incapable of pointing out any that are common to all dogs, yet distinguish them all from the different species of wolves and jackals; and in fact, *recurved tail,* not apparently a character of the first importance, is named by Cuvier himself as the most certain and unvarying specific distinction. The obliquity of the eyes of wolves is also contrasted with the more forward direction of those of dogs, which is accounted for—in favor of the theory of wolfish origin—by the supposition that it results from 'the constant habit, for many successive generations, of looking forward to their master, and obeying his voice.'—Bell's *British Quadrupeds.* This, on the other side, is treated with ridicule; it is certainly a transition from the region of observation and ascertained fact to that of mere theory and conjecture. In size, dogs differ so widely that one is not as large as the head of another; the difference in form of body, head, or limbs, is almost equally great between the Newfoundland dog or the mastiff and the greyhound. The gradations, however, from one form or character to another, render it impossible to draw a fixed limit. In some races of dog, the hind-feet as well as the fore-feet have five toes, instead of the more common four; but this has not been much insisted on as a ground of specific distinction. Greater value attaches perhaps to the lack in some, as the dholes (q.v.) of India, of the second tubercular tooth in the lower jaw; also the hairiness of the soles of the feet of some is perhaps important; and in favor of the opinion that domestic dogs have originated from an intermixture of several species, it has been urged that the number of teats in the female varies, and that there is sometimes even a difference between the number on one side and on the other, which has never been observed in wild dogs, and in them the number in the same kind is always uniform. Some of these points have not received the investigation necessary to determine their importance.

It seems to have been too hastily taken for granted, in favor of the opinion that there is only one species of dog, that all the wild races, even the dholes and the dingo, have sprung from domestic progenitors. There is certainly no evidence of this; and the fact that wild races exist, exhibiting marked diversities of character, in countries widely remote and of very different climates, is referred to with confidence on the other side, as affording at least a strong presumption in favor of the supposition that man has, in different countries, domesticated the species which he found there. We do not yet know enough of the amount and limits of the changes which circumstances and climate may produce, to warrant any confident conclusions on that ground. And if we were to adopt the views of those who ascribe least to such causes, we might yet demand of them to show why, although from certain original types no mixed race can originate, there may not yet be other original types capable of such combination, or why the limits must be held equally impassable between all that were framed by an original act of creation. That there was only one original pair of the human race, may be held, without of necessity holding that there was only one origi nal pair of dogs. But to this consideration due place has, perhaps, scarcely been given.

That the common fox—or any species of fox—is a parent of any race of dogs, is not the opinion of any naturalist. Some dogs have a somewhat fox-like appearance, and indeed it is now generally admitted that the dog and fox will breed together, but as it has not been proved that the individuals of the cross will breed together, this fact does not warrant the assertion that the dog and fox belong to the same species. Instances of commixture between the dog and wolf have occurred in greater numbers, and without the compulsion of confinement, but in this case, too, the only recognized proof of identity of species—namely, the permanent fertility of the progeny—is wanting.

In favor of the specific identity of the dog and wolf, one of the strongest arguments is drawn from the equality of the period of gestation—63 days. But it may be remarked that an inequality of the period would have afforded a much stronger argument on the other side.

Against the identity of the dog and wolf, the difference of disposition has been strongly urged. In reply, it is shown by well-authenticated instances that the wolf is very capable of that attachment to man which so remarkably characterizes the dog. There is greater value, perhaps, in the argument of Col. Hamilton Smith, that 'if domestic dogs were merely wolves modified by the influence of man's wants, surely the curs of Mohammedan states, refused domestic care, and only tolerated in Asiatic cities in the capacity of scavengers, would long since have resumed some of the characters of the wolf.'

Buffon's notion, that the shepherd-dog is the original type of the whole species, from which all dogs are derived, is merely fanciful, and his endeavor to support it by a comparative view of the different kinds, is merely ingenious.

The shepherd's dog is one of the kinds of dog having greatest development of brain, but it is still greater in the spaniel. The skulls of dogs exhibit no very marked distinctions when compared with each other, nor when compared with those of wolves and jackals.

It is universally believed that the diversity of color exhibited by many dogs is a result of domestication, as it is found neither in those which may be supposed to exist in a state of original wildness, nor in those wild races certainly known to be the progeny of domestic dogs, a return to uniformity of coloring being apparently one of the most speedy consequences of a return to wildness. Black, reddish-brown, and white, the uniform colors observed in wild dogs, are, however, the colors which chiefly appear mixed in domestic races.

Pendulous ears are generally regarded as another result of domestication in dogs, as in rabbits; and it is certain that the wild races known have erect and pointed ears; but no wild race has been discovered at all corresponding to the mastiff in some of its other most notable characters, particularly the shortness of the muzzle, and depth of the chops, and it has therefore been conjectured that this and kindred races may have derived their origin from some wild dog of the interior of Asia, which has not yet come under the notice of any scientific observer.

The dog has been a domestic animal from a very early period. The earliest allusions to it are in the books of Moses, but they correspond with the dislike and contempt still commonly entertained for it by many of the nations of s. Asia. By Homer, however, it is very differently mentioned; and 'there is not a modern story of the kind which can surpass the affecting simplicity with which the poor dog's dying recognition of his long-lost master is related by one who wrote, probably, not less than 2,700 years ago.' The sculptures of Nineveh, and the hieroglyphics of Egypt, attest the very early domestication of the dog, and the existence of races similar to some at the present day; and the high value attached to it by many nations is further attested by the place assigned to it, or its image, as emblematic of the attributes which they ascribed to their gods. We do not now set so high a value on the dog, in consideration of mere usefulness to man, as on some of the other domestic animals; yet to the savage it is perhaps the most important of all, and some have supposed that by its aid the subjugation of other animals may have been first accomplished. Cuvier makes the strong assertion, that the dog 'is the most complete, the most singular, and the most useful conquest ever made by man.' The dog, far more than any other animal, becomes a humble friend and companion of man, often seeming actually to know and sympathize with the joys and sorrows of his master; and on this account it is, that he is alike 'the pampered minion of royalty and the half-starved partaker of the beggar's crust.'

The uses to which the dog is applied are numerous, and correspond, in some measure, not only with distinct physical characters, but with remarkably distinct instincts of different breeds. Thus, while in some countries dogs are employed chiefly as beasts of draught, particularly for drawing sledges in the frozen regions of the north; and in other countries chiefly for the chase, the exquisite scent of some kinds, and the remarkable fleetness of others, variously recommending them for this use; they also render important services in the care of sheep and other cattle, and are endowed with hereditary instincts wonderfully fitted for this purpose; and with like adaptation of instinct they are highly valuable in watching and protecting the abodes and properties of their masters. Not the least interesting of the employments to which the dog has been devoted by man, is that of leading about the blind, often with an intelligent and affectionate solicitude.

Anecdotes illustrating the instincts, and the intelligence and affection of dogs, are familiar; they are also worthy of philosophic consideration.

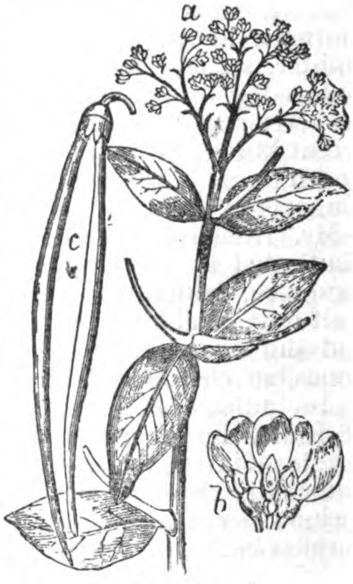
The dog produces usually from six to ten young ones at a birth. They are born blind, open their eyes about the tenth or twelfth day, attain their full growth in about two years, seldom live more than 12 or 15 years, and almost never more than 20.

No satisfactory classification of the different kinds of dog has ever been made. What some naturalists regard as types of species, others pronounce mere mongrel races. Nor can any principle of arrangement be found in form, roughness, or smoothness of fur, or other such character, which will not associate kinds that are in other respects widely dissimilar, and separate some nearly allied.

Col. Hamilton Smith arranges domestic dogs in six groups or sections: 1. 'The wolf dogs,' including the Siberian dog, Esquimaux dog, Iceland dog, Newfoundland dog, Nootka dog, sheep dog, great wolf dog, great St. Bernard dog, Pomeranian dog, etc. 2. 'The watch and cattle dogs,' including the German boar-hound, Danish dog, matin, dog of the N. American Indians, etc. 3. 'The greyhounds,' including the Brinjaree dog, different kinds of greyhound, Irish hound, lurcher, Egyptian street dog, etc. 4. 'The hounds,' including the bloodhound, old southern hound, staghound, foxhound, harrier, beagle, pointer, setter, spaniel, springer, cocker, Blenheim dog, water dog or poodle, etc. 5. 'The cur dogs,' including the terrier and its allies. 6. 'The mastiffs,' including different kinds of mastiff, the bulldog, pugdog, etc. Col. H. Smith does not include in any of these groups the dholes, dingo, etc., which he even separates from the genus *Canis*. —Mr. Richardson arranges dogs in three great groups, 'indicated by the least variable part of their osteological structure, cranial development.' 1. Including the Irish wolf dog, Highland deerhound, all kinds of greyhounds, and the tiger hound, characterized by *convergent* parietal bones, an elongated muzzle, and high and slender form. 2. Including the great Dane, the French matin, the pariah of India, the bloodhound, staghound, foxhound, harrier, beagle, pointers, terriers, turnspit, Newfoundland dog, Labrador dog, Pomeranian dog, Esquimaux dog, Siberian dog, Iceland dog, shepherd's dog, etc., characterized by *parallel* parietal bones, and generally by much acuteness of smell. 3. Including mastiffs, the great St. Bernard dog, bulldog, pugdog, etc., characterized by sensibly *divergent* parietal bones, bulk of body, robust structure, and combative propensities.

DOG, in Law. The keeping of vicious or destructive dogs, or other animals, except under proper precautions, is illegal; and the proprietor is liable for the damage which they occasion in all cases in which it cannot be clearly shown that the fault lay with the party injured. Even before the injury occurs, it is competent to enforce measures of precaution. If a man have a dog which he knows to be of a savage nature, and addicted to bite, he is responsible if he allow it to go in a frequented place without being muzzled or otherwise guarded so as to prevent it from committing injury. If the dog be of a ferocious kind, as a mastiff, it has been held in England that he must be muzzled (1 Russ. 303); and it will be no defense in an action of damages against the master, that the person injured trod on the dog's toes, for he would not have trodden on them if they had not been there (3 Car. and P. 138). In the United States and Britain it is lawful in self-defense to kill a dog when dangerous, and to kill a rabid dog at any time. A dog kept to guard premises must not be of such ferocity as to inflict serious injury, since a mere trespasser might thereby suffer undue punishment. Many local police acts contain provisions as to shutting up or muzzling dogs during the prevalence of weather likely to produce hydrophobia; and where such do not exist, the subject may be dealt with by the magistrate at common law. Formerly, the common law of England held that it was not larceny to steal any of the baser animals, in which class all dogs, except those of peculiar value, were included. But now, in England, as in the United States, dog-stealing is an offense punishable by law.

DOG'BANE (*Apocynum*): genus of plants of the nat. ord. *Apocynaceæ*, having bell-shaped flowers, no style, and the fruit a long linear follicle. Some of the species are shrubby, some herbaceous; some extend into colder climates than is usual for plants of this order. The D. of N. America (*A. androsæ-mifolium*), a perennial herbaceous plant, about four ft. high, with smooth stem, much milky juice, smooth ovate leaves and whitish rose-colored flowers, growing in open barren places from Georgia to Canada, is valued for the medicinal properties of the bark of its root, which is emetic, diaphoretic, and in small doses tonic. The root of CANADIAN HEMP (*A. cannabinum*), a plant noticed on another account in the article *Apocynaceæ*, has similar properties, and is frequently used in the United States.



Dogbane: *a*, end of branch, with leaves and flowers; *b*, a flower cut open; *c*, fruit.

DOG-DRAW, in English Law: apparent deprehension of an offender against venison in the forest. 'Dog-draw is where any man hath stricken or wounded a wild beast by shooting with a cross-bow, long-bow, or otherwise, and is found with a hound or other dog drawing after him to receive the same.'—Cowel's *Interpreter*.

DOGE, n. *dōj* [It. *doge*, a doge, a certain general—from mid. L. *duca*—from L. *ducem*, a leader], (equivalent to *duke*): name of the chief magistrate, possessing princely rank, in the ancient republics of Venice and Genoa. Dogate or dogado, both from the Latin *ducatus*, duchy, is used to indicate the dignity of doge. We find doges of Venice elected by the people, but exercising almost the rights of absolute monarchs, as early as the beginning of the 8th c. Their power was considerably reduced toward the end of the 12th c., through the creation of a Great Council, of 470 members chosen from nobles as well as citizens, and invested with legislative power. These afterward appointed six of their own number to superintend the D. in the exercise of his executive power. Further, the *pregadi*, or nobles, who formerly were admitted by the D. to a share in the public affairs, were organized into a regular board of administration, numbering 60 members. By the new constitution, the people, too, lost the most essential of their rights—viz., the right of electing the D. This right was now changed into a privilege belonging exclusively to the Great Council, whose members elected 24 from among themselves, and these latter again elected, by ballot, 12 of their own number, upon whom devolved the right of appointing a D. Sebastiano Ziani was the first thus elected, 1177; and on the occasion of his elevation to office, he scattered money among the people, to console them for the loss of their rights—an act which was imitated by his successors, and soon became a recognized custom, as was also the manner in which he went through the ceremony of wedding the Adriatic Sea. The Pope Alexander III., whom, during his quarrels with the Emperor Frederic I., the D. had faithfully supported, sent him, with other privileges, a ring, as the symbol of the domination which the republic had acquired over the Adriatic. Accordingly, a marriage-ceremony took place on Ascension Day—a ring being thrown from the ship *Bucentaur* into the sea, to show that 'as the wife is subject to her husband, so is the Adriatic Sea to the republic of Venice.' The practical bearing of the ceremony soon appeared in the shape of stringent measures, regulating the navigation of the Adriatic, and imposing tribute on all foreign ships. The power of the D. underwent, 1179, a signal modification; the Treble Quarantia—a high court of justice, originally of 40 members—having been erected, as also the board of *Advogadori* for the settlement of fiscal questions instituted. During the reign of Jacopo Tiepolo (1229–49), a new restriction arose from the creation of an independent police, and a still greater one from the formation of a tribunal of three inquisitors and five correctors, who, on the demise of a D. had to examine his conduct, sifting the minutest particulars of his private life. All these changes were effected by the Great Council, to the thorough exclusion of the people. In 1268, the Great Council, in order to cut short all family influence upon the affairs of the state, devised a curious and extremely complicated mode of election; but notwithstanding the limitations new and old, the power of a D.

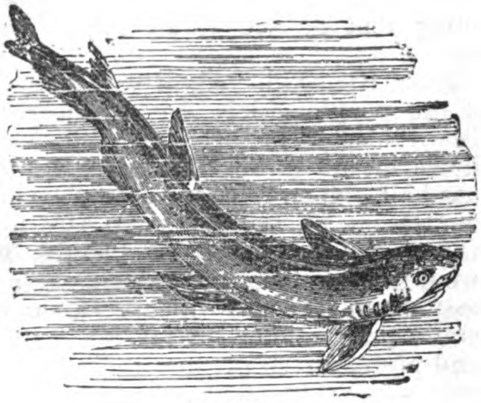
continued great, if he was only wise enough to profit by the contentions between nobles and citizens, the disputes of the different authorities, and especially by his own position as commander-in-chief of the forces and high-admiral of the navy. This last prerogative remained in vigor till 1628, when, by a formal enactment, the D. was prohibited the exercise of such command unless authorized by the Council of Forty. Other privileges, however, belonging originally to the dogate, were abrogated or circumscribed long before this, especially during the period 1289–1311. Thus, at the instigation of the D. Gradenigo, who was actuated by jealousy toward the mighty family Tiepolo, the famous law of 'closing the Great Council' was passed, and by it the whole legislative and judicial power made the heirloom of those families whose names were inscribed in the Golden Book, or *Libro d'Oro*. About that time (1309), ecclesiastics of any degree were declared unfit for political or judicial functions. To counterbalance the influence of discontented nobles, a yearly public feast was instituted—at which the D. gave a dinner to the fishermen, fraternizing with them in testimony of equality. Shortly before Gradenigo's death, that terrible tribunal, the Council of the Ten, was erected, which was to be the highest in the state, irresponsible, and entitled to pass judgment upon the D. himself. Meanwhile, the Great Council managed to circumscribe the functions of the D. public as well as private, in the minutest way. It was ordered that the D. should not announce his accession, except to the princes of Italy; neither was he permitted the opening of dispatches emanating from the popes or from princes; the kissing of his hands, or kneeling down in his presence, was strictly interdicted. He could not leave town, be possessed of real property abroad, or allow his children to contract matrimonial connections with foreign houses, accept donations, etc. He had to submit to the continued presence of two *advogadori*, to be fined for the least mistake, and bear the expenses of the ducal dignity from his own purse. To all these restrictions and burdens the D. declared himself liable on the occasion of his coronation, by signing a document headed 'Promissione.' The state costume and retinue of the D. were minutely defined, and a trifle fixed as his salary. As a symbol or princely dignity, the D. wore a horned cap, and had the title of Serenity. The credentials of ambassadors were written in his name, but signed by a secretary of state, and sealed with the arms of the republic. The money was struck in his name, but not with his stamp or arms. All the magistrates rose and saluted the D. when he came into council, and he rose to none but to foreign ambassadors. His family was exempt from the jurisdiction of the Master of the Ceremonies; and his children, though excluded from public offices, were allowed to have staff-officers, and gondoliers in livery. After the death of And. Dandolo, 1354, on a motion from the correctors, the three presidents of the quarantia, and later six ministers, were joined to the six privy-councillors of the D., who, together with the above-

named, has formed henceforward the so-called **Signoria** Serenissima. At that stage the rank of D. could no longer be an object of ambition, and as early as 1339 a law was necessary to prohibit one elected from resigning his place. And. Contarini, 1367, accepted the proffered dignity only upon the threat of being declared a traitor to the country. In 1413, by a law emanating from the Great Council, the D. was even denied the title of Signoria, that of Messere being substituted instead; at the same time he was deprived of the right of convening an *arengo* or meeting of the people. With the fall of the Venetian Republic, 1797, the dignity of D. also disappeared. There were in all 73 doges at Venice, the first of whom, Anafeste (Paoluccio), was elected 697; the last, Manin (Lodovico), 1788. In the Palazzo Ducale, the celebrated frieze of the doges is to be seen round the Sala del Maggior Consiglio, exhibiting 72 portraits, and one space covered with a black veil, with an inscription, indicating that Faliero (Marino) was beheaded for high treason.

The republic of Genoa elected, after a victory gained by the party of the people (1339), Simon Boccanera for its first D. He was elected for life, and with absolute power, of which, however, he allowed a share to 12 aldermen (*anziani*), one half chosen from the *cittadini* (citizens), the other among the *nobili* (nobles). In the long run of centuries, the power, duration, and splendor of the ducal seat underwent frequent changes, arising from the vicissitudes of the state and the hostilities between the popular and aristocratic parties. A constitution for defining the functions and prerogatives of the D. was framed 1528, after the great victory of And. Doria over the French. According to this constitution, which, with slight modifications, remained till the end of the republic, the dignity of D. was of two years' duration, under restrictions similar to those at Venice. The candidate was to be a noble, at least 50 years of age. The D. presided, with the right of veto, in the sittings of the Great Council of 300 members, as also in those of a smaller one of 100. These two councils exercised the legislative power, whereas the executive was vested in the D., with 12 *governadori* and 8 *procuratori*, among these latter being always the D. retiring. During the time of his government, the D. resided in the state palace, where he was liable to the same restrictions and ceremonies in use at Venice When, 1797, Genoa was occupied by the French, the dogate ceased to exist; in 1802, the Genoese Republic being, conjointly with the Ligurian, re-established, the ducal dignity was resuscitated; but in 1804, it disappeared for ever, the republic itself having been dissolved.

DOG'FISH: popular name of some of the smaller species of shark; apparently owing its origin—like the names porbeagle, hound, etc., bestowed on others of the same family—to their habit of following their prey like dogs hunting in packs. Of the species to which the name D. is given one of the most abundant is that sometimes called the COMMON D. (*Acanthias vulgaris*), also known as the

Picked (i.e., piked or spined) **Dogfish.** It belongs to the family *Spinacidæ,* of which one characteristic is the presence of a spine before each of the two dorsal fins; and which is further characterized by having spiracles or spout-holes; by having five gill-openings on each side all before the pectoral fins; and by having no anal fin, and no nictitating membrane of the eye. The body is long and tapering; the head flat; the snout conical; the teeth in both jaws sharp-edged, and formed for cutting. The tail-fin is longer than it is broad. The upper parts are slate-gray, the under parts yellowish-white; the skin very rough when rubbed from tail to head, but seeming smooth when rubbed in the contrary direction. This fish uses its spines in a remarkable manner, bending itself into the form of a bow, and unbending with a powerful spring; and 'if a finger be placed on its head, it will strike it without piercing its own skin.' It attains a length of three or four ft. It is very widely-distributed, being found in the Atlantic, the Mediterranean, and the South Seas. It causes great annoyance to fishermen, by cutting the hooks from their lines, and still more by frightening away the shoals of herring, in which other kinds of D. share the blame with it. It sometimes appears in prodigious numbers; 20,000 have been taken in a net at one time on the coast of Cornwall; and the fishermen of the Orkneys and Hebrides sometimes load their boats to the water's edge with these fish. The flesh, though coarse, is dried and eaten; the livers yield oil, and the refuse parts are used as manure.—The other dogfishes on the British coasts belong to the genus *Scyllium,* family *Scylliidæ,* which have an anal fin, and two dorsal fins placed far back. They resemble in general form the species above described, and like it, they have the tail-fin longer than it is broad—they have five gill-openings on each side—the last of which, however, is over the base of the pectoral fin. They have spout-holes, and no nictitating membrane; but their teeth are very different, having a long central point, with shorter points on each side. The **Spotted** D. of two species (*S. canicula* and *S. catulus*), both of a generally reddish-brown



Dogfish.

color, and marked with dark spots, is often taken with bait on all parts of the British coasts; and though almost never brought to market, is much used for food in the Orkney Islands. It has been suggested that the fins of these and other sharks might be used for making gelatine soup, as in China.

DOG'-FOX: name sometimes given to certain small animals of the family *Canidæ* allied to the *Corsac* (q.v.), and, like it, referred to the genus *Cynalopex*. They have a sharp muzzle like that of a greyhound, rather large, erect, pointed ears, the pupil of the eye contracting circularly as in the dog, the tail bushy like that of a fox. They inhabit warm parts of Asia and Africa; and some, if not all of them, burrow.

DOGGED, DOGGEDNESS: see under Dog.

DOGGER, n. *dŏg'gėr* [F. *dogre*; Dut. *dogger* a vessel—the Dut. *dogger* originally signifying a cod-fish; Icel. *dugga*]: vessel something like a galliot or a ketch, used by the Dutch as a fishing-boat, usually for herring, in the German Ocean. It is not certain whether it was named after the Doggerbank, or *vice versâ*.

DOGGERBANK, *dog'gėr-bănk:* extensive flat sand-bank in the middle of the German Ocean, between England and Denmark; lat. 54° 10′—57° 24′ n., long. 1°—6° 7′ e. This shoal stretches 320 m. e.n.e. from 12 leagues east of Flamborough Head to within 20 leagues of Jutland. A prolongation runs e. toward Horn Point, Denmark. The bank is in some parts 60 m. broad, but the average breadth is 40. Toward the English coast, the water above it is only 9 fathoms deep, in some parts it is 30, but the average depth is 15 to 20. The surrounding sea is in many parts 24 to 60 fathoms deep. The surface of the bank consists chiefly of fine sand and ooze. It is the seat of important English and Dutch cod-fisheries. It supplies especially the English market. About 12,000 men are employed in the fishery; and each vessel stays on the bank eight weeks, then returns to port to refit. At the s. end of D., 1781, occured the indecisive naval fight between the Dutch and English fleets, under Admirals Zoutman and Parker respectively.

DOGGEREL, n. *dŏg'gĕr-ĕl*, or Doggrel, n. *dŏg'rĕl* [comp. Gael. *do-ghradh*, disagreeable, unpleasant; *docair*, bad, painful: perhaps connected with Dog]: a sort of loose or irregular kind of poetry, unpleasant to the ear: Adj. a name applied to rude burlesque poetry, as *doggerel* verse or rhyme.

DOG'GET'S COAT AND BADGE: prize at a rowing-match on the Thames, from London Bridge to the Old Swan at Chelsea, yearly, Aug. 1. Beside the original prize (the bequest of Thomas Dogget, actor at Drury Lane, 1715) other prizes are competed for. The competition is by six young watermen whose apprenticeships have expired the previous year, each in a boat by himself, with short oars or sculls; and the race is at the hour when the current of the Thames, by recession of the tide, is strongest against the rowers.

DOGLIANI, *dōl-yâ′nē:* town of Piedmont, n. Italy, in a mountainous district on the left bank of the Rea, 12 m. n.e. of Mondovi. D. has the remains of an old castle, but no other buildings worthy of note. Here five annual fairs are held, at which cattle, hemp, and victuals are chiefly sold. Pop. 2,000.

DOGMA, n. *dŏg′mă*, **DOG′MAS**, n. plu. *-măz*, or **DOG′MATA**, n. plu. *-mă-tă* [Gr. and L. *dogma*, a received opinion —from Gr. *dŏkĕō*, I judge, I think: comp. Gael *dogh*, an opinion]: a settled opinion; a doctrine; the ecclesiastical formula in which a truth or doctrine of revealed religion is expressed; a tenet or point of faith in religion or philosophy. **DOGMAT′IC**, a. *-măt′ĭk*, or **DOGMAT′ICAL**, a. *-ĭ-kăl*, positive; disposed to insist imperiously or with high authority; overbearing; arrogant. **DOGMAT′ICALLY**, ad. *-lĭ*. **DOGMAT′ICALNESS**, n. **DOGMAT′IC**, n. one of an anc. sect of philosophers. **DOGMAT′ICS**, n. plu., or **DOGMATIC THEOLOGY**, doctrinal theology, or the systematic arrangement and treatment of the doctrines of the Christian religion. **DOG′MATIZE**, v. *-mă-tīz* [F. *dogmatiser*]: to assert positively without proving; to teach with bold confidence; to advance opinions or teaching with arrogance. **DOG′MATI′ZING**, imp. **DOG′MATIZED**, pp. *-tīzd*. **DOG′MATI′ZER**, n. *-tī′zėr*, one who. **DOG′MATIST**, n. a positive or confident asserter; one who boldly and arrogantly advances statements and principles without proof. **DOG′MATISM**, n. *-tĭzm*, arrogance in stating opinions or principles; positive assertion.—SYN. of 'dogma': tenet; opinion; proposition; principle.

DOG′MA, in Theology: properly a doctrine founded on Scripture, and advanced not for discussion but for belief. But as this method of stating a proved truth easily degenerates into the assertion of opinions without ground, and without regard to the aspect that they may present to others, *dogma* and *dogmatism* have come in English to be almost synonymous with assertion without proof.

In European continental theology, however, the word is still used without implying any censure, Dogmas (Ger. *dogmen*) meaning simply doctrines; and this is the case in our own expression, Dogmatic Theology, or Dogmatic, which is that branch of theology that treats of the systematic arrangement of the doctrines of Christianity. Older names for the same thing were *Loci Theologici* and *Theologia Positiva*.—The first attempt to give a connected view of Christian doctrine was in the 3d. c. by Origen in *De Principiis*. He was followed in the 4th c. by Augustine, who in *De Doctrina Christiana*, and other books, treated of the whole body of doctrine held by the church, though without any very scientific arrangement. The contributions to Dogmatic, made in the 5th, 6th, and 7th c., were mere collections of 'sentences.' In the East, in the 8th c., the doctrines of the Greek Church were treated by John of Damascus in a form already Aristotelian, and his work may be considered the first systematically arranged treatise on Dogmatic. He makes no mention of purgatory. His book was as influential in the Greek Church as the writings of Augustine in the Latin. The regular systematizing of doctrines began with the SCHOLASTICS in the 11th c., but degenerated often into hair-splitting. The first cultivators of Dogmatic theology among the Scholastics were Hildebert of Tours and Abelard, followed by Petrus Lombardus, Alexander de Hales, Thomas Aquinas, Duns Scotus, etc.

The era of the Reformation awoke Dogmatic to a new life, leading it back from Aristotle to biblical theology. But the controversies between the different churches in the 17th c, and the too great importance attached to Confessions of Faith, cramped anew its freedom, and gave it again a Scholastic turn. Many of our still standard treatises on systematic divinity wear remains of these fetters, and contrast strikingly with the independence and vigor of inquiry in the similar works of Melanchthon, Calvin, and other reformers. A fresh revival followed in Germany the spread of the critical philosophy of Kant, when biblical theology rose up in distinction from the theology of confessions, and the dogmatic was grounded on the critical interpretation of Scripture rather than on traditional formulas. Hence, however, have sprung widely diverging views. One party still held fast by the existing confessions; another looked chiefly to the contents of Scripture; while a third subjected confessions and Scripture alike to the test of reason. Besides these, there arose in more recent times, a school of dogmatic theologians, formed on the philosophical systems of Jacobi and Schelling, who looked for the essence of religion in the human soul itself, and considered Christianity as the historical revelation of it. Of this school, Schleiermacher, and in some respects Neander and Rothe also, may be considered the representatives; and of all the German schools, it is that which seems to be exercising the greatest influence on the speculative theology of Britain and America. An important contribution to this department of theology was Peter Lange's *Philosophische Dogmatik* (2 vols., Heidelb. 1849–51). The Dogmatic of D. F. Strauss is constructed from the Hegelian point of view, and in its leading results comes back to the system of Spinoza.

It deserves remark that Christian dogmatic and morality, which it had been the custom to discuss separately since the 17th c., have recently been treated in combination by Nitsch and Beck. The scientific investigation of Christian doctrine in Germany has not been confined to the Prot. churches. A number of Rom. Cath. theologians have occupied themselves with this branch of sacred science; some, as G. Hermes of Bonn, inclining to freedom of investigation, and others, as Liebermann, to the defense of the usual formulas.

The HISTORY OF DOGMAS OR DOCTRINES has been raised in Germany to the rank of a distinct branch of sacred science. In Britain and America, the facts with which it deals have received in treatises on systematic theology only passing notice, and in ecclesiastical history have been considered as the 'internal history of the church.' Some works have been devoted to a brief outline presentation of the subject. The pursuit of this branch of inquiry is characteristic of Protestantism; in the Rom. Cath. Church, it is considered as endangering the unity of the faith. Many Protestants even dislike the idea of a 'development' of Christian doctrine, which seems involved in its having a history. It is not necessary, however, to believe that doctrines hitherto absolutely unknown or denied, came from time to time to be embodied in the orthodox creed of Christendom: see DEVELOPMENT OF DOCTRINE. The fact is indisputable that the several doctrines came one after the other into prominence in the consciousness or the experience of the church; and that in each period of her history there is some one leading doctrine which rises to importance, as if it were the mainstay of Christianity. To depict this succession or evolution of views with their struggles and modifications, and trace the different ways in which the several doctrines were at different periods formulated and embodied in the creeds, is the object of a History of Doctrines (Ger. *Dogmengeschichte*). There is, of course, room for great variety in the method of treating such a subject. Among the most important works on this subject is Neander's, edited by J. L. Jacobi, 1856 (English transl. 1858), and that of F. C. Baur (1847), whose name marks an era in this branch of study.

DOGS, *dŏgs*, ISLE OF, or *Poplar Marshes:* small peninsula in the county of Middlesex, England, formed by a circuitous winding of the Thames; in the vicinity of London, three and a half m. e.s.e. from St. Paul's Cathedral. It is about a mile long, and three-quarters of a mile broad. In what may be called the isthmus of the peninsula are the West India docks. It is said that the Isle of Dogs derives its name from the circumstance that the king's hounds were formerly kept here.

DOGS: see ANDIRON.

DOG'SHORE: see LAUNCHING.

DOG'S'-TAIL GRASS (*Cynosurus*): genus of grasses having a somewhat close spike or ear, each spikelet with two equal glumes and 3–5 florets, and beneath each spikelet a comb-like bract or involucre. The popular name is from a fancied resemblance. The species, not very numerous, are natives chiefly of Europe and Asia. Two are found in Britain, but one only is common and valuable, the CRESTED D. G. (*C. cristatus*), which forms an important part of almost all good pastures, and is esteemed particularly for sheep-pastures and lawns, for the improvement of which it is often sown. Its herbage is fine and close, and its deep roots secure it against droughts, which cause many other grasses to wither; but the herbage is not sufficient in quantity to make it desirable for hay.—The comb-shaped bract connected with each spikelet of this common grass is a very interesting and beautiful object. The seeds are small, shining, and yellow, whence the name *Gold-seed* sometimes given to this grass by farmers.

DOG'WOOD, or DOG'BERRY: name usually given to some of the aboreous and shrubby species of the genus

Cornus: see **Cornel.** The common D. of Europe (*C. sanguinea*), native of Britain and many parts of the continent, and also of n. Africa, is a shrub of 4–15 ft. in height, with ovate leaves, and terminal cymes of greenish-white flowers, which have an unpleasant odor. The leaves become of an intense dark-red color before they drop off in autumn. The wood makes the very best charcoal for gunpower. It is very hard, and is made into skewers for butchers and cooks, and into cogs for wheels. The young wood was, in former times, in request for the making of arrows. The fruit, which is small, dark purple, and very bitter, yields an oil said to be equal to that of the olive, and to the amount of 34 per cent. of its weight. This oil is used in France for lamps, and for the manufacture of soap. —The D. of N. America (*C. florida*) is a small tree, found in the United States, from lat. 43° to Florida, with oval leaves, and small yellowish flowers, which are surrounded by large white roundish bracts. The berries are red, and remain on the tree most of the winter. The flowers appear before the leaves, and their large white bracts are among the ornaments of the American woods in spring. The tree attains a height of 20–30 ft., with a trunk 8 or 10 inches in diameter. The wood is white, hard, fine-grained, much esteemed and used for inlaying and ornamental work. The bark is very successfully employed in the cure of intermittent fevers. It is also a valuable tonic. It is one of the most valuable medicinal products of N. American. The barks of several other N. American species of *Cornus* possess similar properties.—Jamaica D. is *Piscidia erythrina*,

Common Dogwood:
***a*, branchlet, with leaves and flowers; *b*, fruit**

of the nat. ord. *Leguminosæ*, sub-order *Papilionaceæ*, a good timber-tree, with hard and resinous wood, which lasts well either in or out of water; the bark of the root powerfully narcotic, used for stupefying fish, and also for relieving toothache, being applied to the tooth in the form of a saturated tincture, or taken into the stomach as a powerful sudorific.

DOILY, n. *doy'lĭ* [probably a modification of Dut. *dwæle* and *dwaal*, a towel: Swiss *dwaheli*, a napkin: prov. Eng. *dwile*, a mop, a coarse rubbing-cloth]: a small napkin, plain or colored, used for various purposes, frequently at table for putting glasses upon during dessert. Some are highly ornamented. The name is said to be derived from the original maker; but probably it is a modification of the Dutch *dwaal*, the same word as the English *towel*, and was introduced with the article from Holland.

DOINGS, n. plu. *dô'ĭngz* [see Do]: actions good or bad; behavior; conduct; feats.

DOIT, n. *doyt* [Dut. *duit;* F. *d'huit*]: small copper coin current in Scotland during the reigns of the Stuarts. It was a Dutch coin (*duit*), in value the 160th part of a guilder, which, estimated at 20*d.* sterling, would make the doit equal to the eighth of an English penny, or half a farthing. By some authorities it is said to have been worth only the twelfth of a penny; in reality, it is difficult to say what was its worth, for being imported, like many other coins of the period, from Holland, it would rise and fall in value according to the scarcity of money. The doit must have been common in the early part of the reign of James VI. The kirk-session of Perth (1582, Apr. 16) 'ordains James Sym to give the witch in the tolbooth 8 doits in the day' for subsistence.

DOITED, a. *doyt'ĕd,* or DOITIT, a. *doyt'ĭt* [Scot.: see DOTED under DOTE]: in *Scot.*, stupid; confused; in *OE.*, superannuated.

DOKKUM, *dŏk'kŭm:* town in the Netherlands, province of Friesland, 12 m. n.e. from Leeuwarden, on the Ee (pronounced *ā*), which cuts it into two irregular parts. Within the town is a broad haven, both for sea-going and for inland ships. There are several regularly built streets and many neat houses. The trade in flax, cattle, wool, and chickory is extensive. In the Dokkummerdiep, shrimps are largely taken. Ship-building, gin-distilling, beer-brewing, carding wool, etc., are principal industries. There are a grammar and other good schools. Pop. 5,000.

DOKOS, *dŏk'ōs:* dwarfish African race of blacks, s. of Abyssinia.

DOLABRA, *do-lāb'ra:* rude ancient hatchet. It is represented on the columns of Trajan and Antoninus, and specimens abound in all museums. When made of flint, in their earliest and rudest form, they are usually called ***celts:*** see CELT.

DOLABRIFORM, a. *dō-lăb'rĭ-fawrm* [L. *dolābră*, **an ax**; *forma*, shape]: in *bot.*, shaped like an ax.

DOLCE, ad. *dŏl'chĕ* [It.]: in *music*, softly and with tenderness. DOLCISSIMO, ad. *dŏl-chĭs'sĭm-ō*, with the utmost degree of sweetness.

DOLCI, *dol'chē*, CARLO, or CARLINO: 1616–1686, Jan. 17; b. Florence: celebrated painter of the Florentine school. He received his first instructions in art from Jacopo Vignali, a pupil of Roselli and a remarkably skilful teacher. His uneventful life was spent entirely in his native city. His works, chiefly madonnas and saints, exhibit the character attributed to him. The faces are full of a pleasing and tender softness, which, however, is often carried so far as to rob them of all character. D.'s drawing is generally correct, his coloring exquisitely delicate and transparent, and in nicety and laborious finish he approaches the most characteristic examples of the Dutch School. His works are numerous, and scattered over Europe. Beside his madonnas, the most famous are his *St. Cecilia*, *Christ Blessing the Bread and Wine*, *Herodias with the Head of John the Baptist*, and *Christ on the Mount of Olives*.

DOLDRUMS, n. plu. *dŏl'drŭms* [AS. *dol-drunc*, foolish—from *dol*, erring; *druncnian*, to have the mind submerged by drinking: Gael. *dòl-dream*, a state of sulking; *doltrum*, grief, vexation]: a sailor's term for the tropical zones of calms and variable winds. TO BE IN THE DOLDRUMS, to be in low spirits, dejected, or melancholy.

DOLE, n. *dōl* [L. *dolor*, grief; *dolĕō*, I grieve (see DOLEFUL)]: in *OE.*, grief; lamentation. DOLENT, a. *dōl'ĕnt*, grieving; lamenting; sorrowing; sad. DOLES, n. plu. *dōlz*, in *OE.*. fatal blows.

DOLE, n. *dōl* [Low Ger. *dole*, a dole: W. *twll*, a pit: Bohem. *dul*, a ditch, a mound]: a slip of pasture left between plowed lands; a boundary mark.

DOLE, n. *dōl* [from DEAL, which see]: that which is dealt or distributed; a part, share, or portion of anything; money or provisions given in charity: V. to distribute grudgingly and in small portions. DO'LING, imp. DOLED, pp. *-dōld*. DOLES AT FUNERALS are of great antiquity. St. Chrysostom speaks of them as given to procure rest to the soul of the deceased. On this ground, as well as on the score of general benevolence, the practice of making gifts to the poor at funerals was common in Britain until comparatively recent times; for it was continued, sometimes on a munificent scale, long after the custom of praying for the dead had been abandoned on the introduction of reformed doctrines. Nichols, in his *History of Leicestershire*, speaking of Strathern in Framland Hundred, observes of this usage: 'In 1790, there were 432 inhabitants, the number taken by the last person who carried about bread, which was given for *dole* at a funeral; a custom formerly common throughout this part of England, though now fallen much into disuse. The practice was sometimes to bequeath it by will; but, whether so specified or not, the ceremony was seldom omitted. On such occasions, a small loaf was sent to every person, without any distinction of age or circumstances, and not to receive it was a mark of particular disrespect.' These doles, whether in money or in articles of food and ale, were at one time common in England, Wales, Ireland, and Scotland; and the custom may be said to have represented, in a simple state of society, that form of benevolence which, in the present day, consists of bequests to hospitals and other public charities. By some writers, the custom is traced to the sin-offering of the Hebrews. See Brand's *Popular Antiquities*, edited by Ellis.

DÔLE, *dōl:* well built town of France, dept. of Jura, 28 m. s.e. of Dijon. It is delightfully situated on a vineyard slope rising from the right bank of the river Doubs, and the environs are tastefully laid out in gardens and promenades. The principal building is an immense cathedral, named, in honor of the Virgin, *Nôtre Dame.* The chief manufactures of D. are hosiery, tiles, pottery, chemical products, and beer; there are also iron-smelting furnaces, flour mills, and some trade in corn, wine, wood, marble, and iron. D. is the *Dola Sequanorum* of the Romans, of whose presence the ruins of two aqueducts, an amphitheatre, several temples, and the 'street' or road which passed from Lyon through D. to the Rhine, still give indications. There are also the remains of a castle built by Frederick Barbarossa in the 12th c. D. is memorable for having sustained several sieges. Pop. (1881) 11,561.

DOLE, *dōl* (Lat. *dolus,* guile): in *Scotch law,* the amount of conscious guilt or evil intention necessary to make a legal crime. A person incapable of consent is incapable also of dole—*doli incapax,* as it is technically called. The corresponding English phrase is *felonious intent.*

DOLE′-FISH: probably that fish which British fishermen employed in the north seas do of custom receive for their allowance, 35 Hen. VIII. c. 7.

DOLEFUL, a. *dōl′fûl* [Scot. *dule,* grief: L. *dolēre,* to grieve: It. *duolo,* pain: F. *deuil,* mourning]: sorrowful; expressing grief; sad; dismal; melancholy; querulous. DOLE′FULLY, ad. *-lĭ.* DOLE′FULNESS, n. the state or condition of being doleful. DOLE′SOME, a. *-sŭm,* melancholy; gloomy; dismal. DOLE′SOMENESS, n. condition of being dolesome; gloom.—SYN. of 'doleful': rueful; piteous; woeful; gloomy.

DOLERITE, n. *dŏl′ėr-īt* [Gr. *dolĕrŏs,* deceptive]: a variety of greenstone, composed of felspar and augite, so called from the difficulty of distinguishing it from certain other trap rocks.

DOLGELLEY, *dŏl-gĕth′lē* or *dŏl-gĕl′lē:* ('dale of hazels'): capital of Merioneth, N. Wales, near the centre of the county, and the largest town in it. It is on the banks of the Wnion, 208 m. n.w. by w. of London. It lies in a rich and picturesque valley, at the foot of Cader Idris, and during summer is frequented by English and foreign tourists. It has manufactures of coarse woolens and flannels; its Welsh Tweed is in great repute and demand throughout the kingdom; lamb and kid skins are tanned and dressed; and in the vicinity are fulling-mills and bleach-greens. Here, in

1404, Owen Glendwr held a parliament, and signed a treaty of alliance with Charles, King of France. Pop. (1881) 2,457.

DOLICHOCEPHALIC, a *dŏl′ĭ-kō-sĕ-făl′ĭk*, or DOL′ICHO-CEPH′ALOUS, a. *-sĕf′ă-lŭs* [Gr. *dolĭchos*, long; *kĕphălē*, the head]: long-headed; applied to the long skulled tribes of the human family, having the diameter of the head from front to back much greater than the transverse diameter. DOL′ICHOCEPH′ALISM, n. *-sĕf′ă-lĭzm*, the state or condition of. DOLICHOCEPHALI, n. plu. *dŏl′ĭ-kō sĕf′ă-lī*, long-headed or long-skulled tribes of the human race; such are certain Australian and w. African races, and such was a long-headed race of cave-occupiers who inhabited Britain in prehistoric times. DOL′ICHOSAU′RUS, n. *-saw′rŭs* [Gr. *sauros*, a lizard]: in *geol.*, a snake-like fossil lizard, of about three feet in length, found in the chalk formation.

DOLICHOPODIDÆ, n. plu. *dŏl-ĭ-kŏ-pŏd′ĭ-dē* [Gr. *dolĭchos*, long; *pous*, a foot]: numerous family of small dipterous flies, belonging to the tribe *Tanystoma*. DOLICH′OPUS, *-ĭk′o-pŭs*, genus of dipterous insects, typical of the family *Dolichopodidæ*.

DOLICHOS, *dŏl′ĭ-kŏs:* genus of plants of the nat. ord. *Leguminosæ*, sub-order *Papilionaceæ*, closely allied to *Phaseolus* (see KIDNEY BEAN), and distinguished chiefly by the extension of the base of the standard to embrace the wings of the corolla at their base. The genus includes a considerable number of species, some shrubby, some annual, and some perennial herbaceous plants. Some have beautiful flowers, and some of the herbaceous species are cultivated for their seeds, which afford a kind of pulse; or for their young pods, which, like those of the kidney bean, are boiled for the table. Among these are *D. Lablab*, native of India and Egypt (which has been made the type of a separate genus, *Lablab*); *D. Nankinicus* (or *Lablab Nankinicus*), a Chinese species; *D. Lubia*, native of Egypt; *D. sesquipedalis*, native of America; *D. Soya*, or *Soja hispida* (the soy bean), *D. Catiang*, and *D. uniflorus* (Horse Gram), natives of India; *D. sphærospermus* (Calavana or black-eyed pea), native of the W. Indies. In the climate of Britain, even the most hardy kinds require the aid of a little artificial heat, and they are reckoned inferior to other kinds of pulse or garden vegetables of easier cultivation. The well-known Chinese sauce or ketchup called SOY (q.v.) is made from soy bean. Allied to D. is the genus *Canavalia*, to which belong the SWORD BEANS of India. *C. gladiata*, the commonly cultivated species, has pods two ft. long. An allied genus is *Psophocarpus*. The seeds of *P. tetragonolobus*, formerly *D. tetragonolobus*, are used in the Mauritius as peas are in Britain; and its pods and tuberous roots are common Indian esculents. Some species of *Pachyrhizus*, also an allied genus, are remarkable for their tuberous roots, as *P. angulates* (formerly *D. bulbosus*), native of India, now cultivated in S. America and other warm countries, which produces pleasant turnip-like tubers; and *P. trilobus*, which has tubers two ft. long and nearly cylindrical, much used as a boiled vegetable in China and Cochin-China.

DOLICHURUS, n. *dŏl-ĭ-kūr′ŭs* [Gr. *dolichos*, long; *oura*, a tail]: in *pros.*, a verse having a redundant foot or syllable; in *entom.*, genus of hymenopterous insects, belonging to the family *Fossores*.

DOLINA, *dō-lē′nâ:* town of Austrian Galicia, in the circle of Stryi, 60 m. s. from Stryi, on an affluent of the Swica. It has extensive salt-mines. Pop. of town and commune about 8,000.

DOLIUM, n. *dō′lĭ-ŭm* [L., a cask, or tun]: the tun, genus of gasteropodous mollusks, family *Buccinidæ:* see WHELK.

DOLL, n. *dŏl* [properly a bunch of rags: Fris. *dok*, a little bundle: Ger. *docke*, a doll: comp. Gael. *dealbh*, an image, a shape]: imitated baby or puppet; a small figure in the human form for the amusement of children. The word doll is of doubtful derivation; possibly from *idol;* in French, the name is *poupée;* in German, *puppe*, from Lat. *pupa*, a girl, a doll. The use of dolls dates from the most remote times, and is common in all countries, barbarous as well as civilized, springing from that love of nursing and fondling infants which is implanted by nature in the female character. Precisely as a child in a princely mansion fondles a costly and finely dressed doll, so does the child of an African or Esquimaux take delight in a piece of wood or bone carved rudely in the form of a baby—in fact, girls in the humbler ranks may sometimes be seen hugging and talking to a bit of stick decorated with a few rags, as if it were a live child.

As in the case of most other toys (q.v.), dolls were formerly imported into Great Britain chiefly from the Netherlands; hence a usual name for a doll was a Flanders baby. These old Flemish or Dutch dolls were of wood, with neatly formed faces and flashy dresses, the cheaper kinds having slender wooden legs. Latterly, there have been great improvements in the making of dolls, and in England and the United States it has become a manufacture; but there are still large importations from the countries on the Rhine, France, and Switzerland. In these continental countries, women and children mostly are engaged in the manufacture. Some carve the heads and bodies, others paint the faces and necks, others prepare legs and arms, and a different class cut out, sew, and put on the dresses. These operations are seldom executed in one manufactory. Usually, dealers buy the fragments so far prepared by villagers, and these are put together in a wholesale way. As the time employed in the preparatory processes is scarcely of any marketable value, the prices of fragments are most insignificant. Hence, as regards all the cheap kinds, with painted faces and ringlets, dolls can be imported at a cost below that at which they could be executed by hand labor. In dolls of a superior kind, with molded wax or composition faces, arms, and feet, glass-eyes, stuffed bodies, flaxen ringlets, and gauze dresses, the English, by their machinery and capital lead the trade. In this as in other trades, there is an economic division of labor; there are dolls' head-makers, dolls' leg and arm makers, doll sewers, doll stuffers, dolls' wig-makers, dolls' eye-makers, and doll dressers. For some dresses, remnants of calico, gauze, silk, and other materials, are procured from shops; but for fashionably dressed dolls, much in demand, it is necessary to buy goods on a large scale. The extent to which dolls' glass-eyes are manufactured is surprising. Some years ago, in evidence before a committee of the British house of commons, a glass-manufacturer at Birmingham stated that he had received, at one time, an order for £500 worth of dolls' eyes, The cheaper dolls' eyes are simply small hollow glass-beads, made of white enamel, and colored with black or blue, but without any attempt at variety or effect; while those eyes of a higher quality have a ring of color to represent the iris. It is stated in the experience of the trade, that since Victoria came to the throne, blue eyes for dolls have been in the ascendant in England; but that black eyes find the best market on the continent, especially for Spanish dolls. Black dolls are made for export to America, where they are in request by girls of negro parentage, and the introduction of gutta-percha is favorable for this branch of the trade. Composition-heads are usually of *papier-mâché*, cast in a mould, and waxed and painted to represent the features.

DOLLAR, n. *dŏl-lėr* [Ger. *thaler:* Dut. *daler:* Ger. *zahlen,* to pay: comp. Gael. *dail,* to deliver, to deal: W. *talu,* to pay—*lit.*, the money in which payments were made]: a silver coin, the unit in the monetary system, of the United States; in use also in Canada. *Dollar* is a variety of the Ger. *thaler*, Low Ger. *dahler*, Dan. *daler;* and the word came to signify a coin thus: about the end of the 15th c., the Counts of Schlick coined the silver extracted from their mines at Joachims-thal (Joachim's Valley or *Dale*) into ounce-pieces, which received the name of Joachims-thaler—the Ger. adjective from the name of the place ('Joachims-dalers'). These coins gained such reputation, that they became a kind of pattern; and others of the same kind, though made in other places, took the name, only dropping the first part of the word for shortness. The American dollar is taken from the old Spanish dollar or piastre, and is only slightly less. It was formerly only of silver; but in the gold dollar was made the unit of value in the United States. In 1878, however, silver was 'remonetized,' and so now shares with gold the rank of standard money. Since 1837 the silver D. proper is required by law to weigh 412½ Troy grains, and since 1873 the silver half-D. 12½ metric grammes; the smaller coins, quarter-D. and dimes, proportionately less. The standard fineness of both silver and gold for coinage is $\frac{9}{10}$, that is, 9 parts metal and 1 part alloy. The gold D. weighs 25·8 Troy grains. The British standard of fineness is $\frac{11}{12}$ for gold and $\frac{37}{40}$ for silver, and the actual value of the U. S. gold D., in British currency, is 4s. 1½d. The U. S. gold coinage includes double-eagles (20 dollars), eagles (10 dollars), half-eagles (5 dollars), quarter-eagles (2½ dollars), with some 3 dollar and 1 dollar pieces. The U. S. silver 'trade' D., authorized by act of congress 1873, Feb. 12, was designed for commercial use in eastern countries, and weighs 420 grains. Though containing more silver than the regular D., the 'trade' D. is now (1888) so restricted in use that it is difficult to pass it in ordinary transactions. Of the regular silver D. the law requires the coinage of $2,000,000 per month, a quantity so far in excess of commercial necessities that many millions are hoarded in the treasury vaults.

DOL'LAR: village in Clackmannanshire, Scotland, on the right bank of the Devon, 10 m. e.n.e. of Stirling; in a plain under the Ochills (q.v.). Coal and iron occur in the vicinity. D is noted for its academy, founded 1818 under the will of Captain M'Nab, a native of the parish, who bequeathed £80,000 for the purpose. It was incorporated by act of parliament 1847, and has a principal and 19 teachers in the classics, arts, modern languages, etc. The principal industrial features of D. are its many famous bleacheries on the banks of the Devon. A mile north of D. are the fine ruins of Castle Campbell, in a wild romantic situation on the top of a high almost insulated rock, in a hollow in the bosom of the Ochills, amid mountain rivulets and forests. It long belonged to the Argyle family. John Knox is said to have resided in the castle under the protection of Archibald, fourth earl of Argyle, the first Scotch noble to embrace Protestanism publicly. Pop. of D. (1881) 2,041.

DOLLART, *dŏl'lėrt*, THE: gulf of the German Ocean, at the mouth of the river Ems, between Hanover and Holland. It is about 10 m. in length by 7 in breadth, and was formed by inundations of the sea, the first in the latter half of the 13th c., and the last in the 16th c. By these watery inroads a large number of villages were submerged, and thousands of persons perished.

DÖLLINGER, *dŏl'ĭng-ėr,* JOHN J. IGNATIUS VON: b. Bamberg, Germany, 1799, Feb. 28: one of the most distinguished of the Rom. Cath. divines of modern Germany; known since 1871, as a leader of the 'Old Catholics.' He was educated at Würzburg, where he received holy orders. For a time he was engaged in parochial duties in his native diocese; but having manifested a peculiar fitness for a literary life, he was appointed a prof. at Aschaffenburg, whence, 1826, he was removed to the chair of Ecclesiastical History in the newly-established Univ. of Munich. From the first he was distinguished as a ready and profound writer. He inaugurated his new professorial career by a work on *The Doctrine of the Eucharist during the First Three Centuries* (1826), and a *History of the Reformation,* a continuation of Hertig's *Handbook of Church History.* He subsequently undertook a new *History of the Church* (vol. 1, 1833, vol. II., 1835), which was speedily translated into French, and into English, and was extended to the 15th c.; with a compendium which extended to the Reformation (1836–43). His very learned and suggestive essay on *The History, Character, and Influence of Islamism* appeared 1838, and *The Reformation, its Internal Development and Effects,* 3 vols., 1846–48. The design of this work, which consists almost entirely of extracts (connected by a very slight thread of narrative) from the writings of the leading reformers and other contemporary Protestant divines, is to present, in the words of the actors in the great religious drama of the 16th c., a picture, doctrinal, moral, social, and political, of the Reformation and its results; but as the great body of the authorities (exclusively Prot.) are German, the interest of the work is mainly national.

For a time, D. undertook the chair of dogmatic theology, in which capacity he delivered lectures on 'The Philosophy of Religion,' on 'Symbolism,' and on 'Patristic Literature,' none of which, however, have been published. He was a frequent contributor to the *Historisch-politische Blätter;* he published several pamphlets on subjects of occasional interest; and was one of the chief contributors to the Rom. Cath. cyclopædia entitled *Kirchen-Lexicon,* in which his articles on Luther, on Bossuet, and on Duns Scotus attracted much attention. In the politico-religious movement of 1846–7, D. was elected to represent the Univ. of Munich in the Bavarian chamber; but being deprived of his professorship, he became disqualified to sit in the chamber. In the parliament of Frankfürt, 1848, he was recognized as the leader of the Rom. Cath. party. Most of the measures of importance bearing on the relations of church and state which (however ineffectively) were originated in that assembly were prepared or suggested by him. In 1849, he was restored to his professorship at Munich, also to his place in the Bavarian chamber, which he held till 1852. Since that year, he has applied himself entirely to theological literature. His work entitled *Hippolytus und Kallistus* (1853) is a masterpiece of patristic criticism; and his *Heathenism and Judaism, the Vestibule of the History of Christianity,* is a most masterly survey of the religious, moral, and social condition of the world at the advent of our Lord. It was quickly followed by *The First Ages of Christianity,* to which it had been designed as an introduction. During the early discussions on Italian unity, D. delivered an address at Munich, which was represented as hostile to the temporal sovereignty of the pope. In order to explain his real opinions on that important question, D. published, 1862, an elaborate work entitled *The Church and the Churches,* partly a comparative survey of the condition of the non-Rom. Catholic communions, and of the Church, and partly a *résumé* of the history and condition of the Papal States; showing that, while the temporal sovereignty was the providential means for maintaining the spiritual independence of the papacy, yet it was not essential; that the papacy long existed without it, and that even if it were overthrown, Providence would devise another means of attaining the same end. The second part was a criticism of the administration of the Papal States, which is understood to have given dissatisfaction to the authorities, as being, although well meant, inopportune, and is from this inopportuneness, unfriendly. A similar feeling is said to have been drawn forth by the part taken by Dr. D. in reference to the 'Catholic Union,' some of the principles of which were supposed to trench dangerously upon the province of authority in matters of religious inquiry; but his orthodoxy and learning were unquestioned, and his influence, especially among Rom. Catholics of his own nationality, was very great until the approach of the time for the celebration of the council of the Vatican. It being understood that the doctrine of the infallibility of the pope would form a subject of discussion, D. was active in organizing an opposition. Articles which appeared in the *Augsburg Gazette,* 1869, March, and which were reprinted more fully under the *nom de plume* 'Janus,' were ascribed to him or to his influence; and during the discussions of the council, he was entirely in unison with the party opposed to the Ultramontane view. On the publication of the decree of the council, which defined the infallibility of the pope in all doctrinal teachings on faith and morals addressed *ex cathedra* to the universal church, D. refused to accept the doctrine. In deprecation of the impending censure of excommunication by the abp. of Munich, he published in October an address to the abp., in which he claimed to be heard in the synod of German bishops, or before a committee of the cathedral chapter. His declaration on papal infallibility called forth replies from Dr. Hergenröther and others, and was accepted. on the other hand, by the so-called Old Catholic party. D. was elected rector of the Univ. of Munich (1871, Feb. 29) by a large majority of votes. Persisting in his refusal to submit to the authority of the council, he was excommunicated by the abp. of Munich 1871, Apr. 18. In 1874, Dr. D. presided over the 'Old Catholic' Conference at Bonn, where he frankly declared that he and his colleagues did not consider themselves bound by the council of Trent. He also introduced a declaration, adopted unanimously, that the

Eucharistic celebration in the church is not a continuous repetition or renewal of the great propitiatory sacrifice. See OLD CATHOLICS: FRIEDRICH. Works of D. not mentioned above are *Past and Present in Catholic Theology* (1863); *The Fables about Popes in the Middle Ages* (1863); *Prophecies and the Prophetical Spirit; Materials for a History of the Council of Trent* (1876). In addition to his accomplishments in book-learning, Dr. D.'s attainments as a linguist, both in ancient and modern languages, are very remarkable. In 1871, he received the honorary degree D.C.L. from Oxford Univ.; and in 1872, LL.D. from Edinburgh. In 1872, the King of Bavaria conferred on him the order of Merit; and in 1874, the emperor of Germany the order of the Red Eagle, second class. In 1873, he was appointed pres. of the Royal Acad. of Science at Munich.

DOLLMAN, n. *dŏl'măn* [Hung. *dolmang:* Turk. *dolaman*]: a long cassock or robe worn by the Turks, and generally by the Sclave races.

DOLLOND, *dŏl'ond*, JOHN: distinguished optician, inventor of the achromatic telescope: 1706, June 10—1761, Nov. 30; b. London; descendant of a French refugee family. His father was an operative silk-weaver, in humble circumstances, and D. was brought up to that occupation. Engaged at the loom all day, he devoted great part of the night to studies in mathematics, optics, and astronomy. He made himself acquainted also with anatomy, and even theology, and went so far in the study of the classical languages as to translate the Greek Testament into Latin. French, German, and Italian also, he knew well. He apprenticed his eldest son, Peter, to an optician; and after Peter had established himself in business his father joined him, 1752. John D. now applied himself to the improvement of the dioptric telescope, and after experiments and researches, for several years, he succeeded in constructing lenses that produced images without any colored fringe. See ACHROMATIC. This was undoubtedly the greatest improvement that the telescope had received since its invention. The Memoir (published in the *Philosophical Transactions* 1758) in which he gave an account of his investigations, was rewarded by the council of the Royal Soc. with the Copley medal. In 1761, D. was elected a Fellow of the of the Royal Soc. His two sons continued the business with great reputation and success.

DOLLY-SHOP, n. *dŏl'lĭ-* [comp. Gael. *diolain*, illegal]: an illegal pawnshop in London (known in Edinburgh and Glasgow as *wee pawn*), where the poor leave a humbler kind of pledges for small sums—they are supposed to be sales made, but the goods can be redeemed by a tacit understanding within a limited time; a store where rags, bones, etc., are purchased—said to have had a *black doll* as its sign or emblem.

DOLMAN, n. *dŏl'man:* a woman's cloak.

DOLMEN, n. *dŏl'mĕn*, or TOLMEN, n. *tŏl'mĕn* [Celtic]: in *archeol.*, the name in France for what British archeologists call a CROMLECH (q.v.). See TOLMEN. The D., properly so called, consists of *one* large unhewn stone resting on two or more unhewn stones placed erect in the earth. But the name is sometimes applied to structures where several blocks are raised upon pillars, so as to form a sort of gallery. One of the most remarkable monuments of this kind is the *Pierre Couvert*, about a mile and a half from Saumur. It is 64 ft. long, about 15 ft. wide, and about 6 ft. high. It has four stones on each side, four on the top, and one at each end. The stone at the east end has fallen down; all the others appear to be as originally placed. Some of them are of great size, one on the roof measuring 24 ft. in length, and more than 2 ft. in thickness. All are of the sandstone of the neighborhood. The floor is unpaved Dolmen is believed to be a Celtic word, signifying a stone table. The monuments to which the name is given are supposed to be the sepulchres of the ancient Celts or Gauls.

DOLO, *dō'lō*: town of n. Italy, govt. of Venice; 12 m. w. from Venice, on the Brenta and Brentano. It is a station on the railway between Padua and Venice. In the vicinity are many villas of the Venetian nobility. Pop. 4,468.

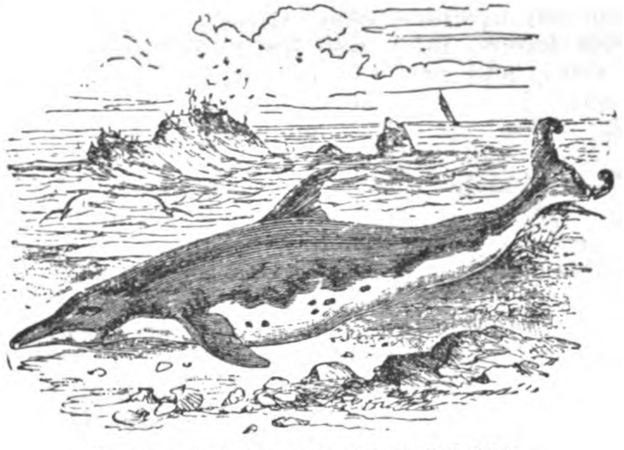
DOLOMITE, n. *dŏl'ŏ-mīt* [after the French geologist *Dolomieu*], known also as Bitter Spar, or Magnesian Limestone: mineral consisting of carbonate of lime and carbonate of magnesia in somewhat variable proportions, sometimes nearly equal, the carbonate of lime often greatly preponderating; and usually containing also a little—sometimef nearly 20 per cent.—of carbonate of iron. It is softer than limestone; usually white; sometimes gray, yellow, or brown; and occurs compact, cellular, or porous, granular, foliated, and crystallized. It chrystals are usually rhomboidal, and its cleavage is rhomboidal. It is readily distinguished from limestone by its feeble effervescence in acids. It occasionally occurs in veins accompanied with quartz, calcareous spar, etc., but also as a rock, and forms mountain masses. It is found largely in the older stratified formations. It is often used as a building stone; the new houses of parliament are built of it. It is also burned and made into mortar, but the lime obtained from it remains much longer caustic than lime from common limestone; and if spread on land in the same quantity, impairs rather than increases the fertility of the soil.—*Brown Spar* (q.v.) is a variety of dolomite.

Dolomite Mountains, distinctively, those in the s.e. of Tyrol and in the Carinthian Alp masses; showing the distinctive peculiarities of dolomite mountain scenery on the grandest scale.

DOLOR, or Dolour, n. *dō'lėr* [F. *douleur*, grief, sorsow—from L. *dolor*, grief: It. *dolore*]: pain; grief; lamentation. Dolorous, a. *dŏl'ŏ-rŭs*, sorrowful; doleful; dismal. Dol'orously, ad. *-lĭ*. Dol'orif'erous, a. *-rĭf'ėr-ŭs* [L. *fero*, I produce]: producing pain. Dol'orif'ic, a. *-rĭf'ĭk*, that causes or produces pain or grief. Doloroso, ad. *dŏl-ŏ-rō'zo* [It.]: in *mus.*, in a plaintive, sorrowful style; with sadness.

DOLPHIN, n. *dŏl′fĭn* [OF. *daulphin*—from Gr. *delphin;* L. *delphīnus*, a dolphin (see DAUPHIN)]: a small cetacean of several species; a spar or buoy fastened to an anchor; a mooring-post at the entrance of a dock or on a quay. **DOL′PHINET**, n. *-fĭ-nĕt*, a female dolphin. **DOLPHIN FLY** (*Aphis fabæ*): insect which infests and destroys the leaves of bean-plants. It is called also, from its color, the Collier Aphis.

DOL′PHIN (*Delphinus*): genus of *Cetacea*, type of a family, *Delphinidæ*, which is characterized by a moderate size of head—differing in this from the *Catodontidæ* or *Physeteridæ* (see CACHALOT)—and usually by having numerous simple and conical or nearly conical teeth in both jaws, though some of the species lose those of the upper jaw at an early age. The blow-hole is single. The family *Delphinidæ* includes, with the dolphins, porpoises, grampus, etc., many animals, which on account of their larger size are very commonly called *whales*, as the Beluga or White Whale the Caaing Whale, the Bottlehead, etc. It contains also a few species, which inhabit not the ocean, but tropical and subtropical rivers, as the Soosoo of the Ganges and the *Inia* of the Amazon. The true dolphins have the snout prolonged into a rather slender beak, which is not only abruptly separated from the convex forehead, but even by a marked furrow. Both jaws are furnished with numerous equal teeth. The species are numerous, most of them recently discovered, and none apparently having the very wide geographical range formerly ascribed to the common D. (*D. delphis*), with which they were confounded. They are very voracious, and are said to prey not only on fishes, medusæ, cephalopods, etc., but even on the wounded and feeble of their own species. They live, however, in herds, which often delight the voyager in the ocean solitude by the gambols which they perform around his ship. ‘They may be discerned at a great distance; as they are continually leaping from the surface of the sea, an action which, as it seems to have no obvious object, is probably the mere



Common Dolphin (*Delphinus Delphis*).

exuberance of animal mirth. When a shoal is seen thus frolicking at the distance of a mile or two, in a few moments, having caught sight of the ship, down they come trooping with the velocity of the wind. When arrived, they display their agility in a thousand graceful motions, now leaping with curved bodies many feet into the air, then darting through a wave with incredible velocity, leaving a slender wake of whitening foam under the water; now the thin back-fin only is exposed, cutting the surface like a knife; then the broad and muscular tail is elevated as the animal plunges perpendicularly down into the depth, or dives beneath the keel to explore the opposite side.'

The Common D. is found in the Mediterranean and in the n. Atlantic Ocean. It is usually not more than 6 or 8 ft. long, but individuals have been seen of 10 ft. The body tapers toward the tail. The tail is crescent-shaped, and about a foot in breadth. The beak is about 6 inches long. The blow-hole is crescent-shaped, with the horns directed backward. The color is blackish on the back, grayish on the sides, and a satiny glistening white beneath. The female D. brings forth a single young one at a time, which she suckles and nurses with great care. Although an inhabitant of the ocean, the D. emits a peculiar murmuring or suppressed lowing cry. The flesh of the D. was formerly considered a delicacy, and sailors still regard the capture of one as a happy event.

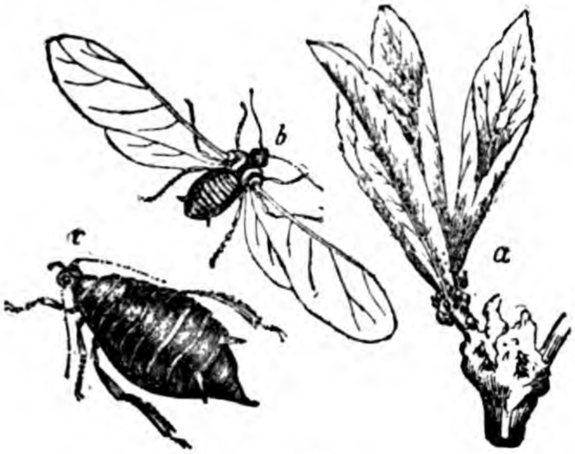
From the form of its beak, the D. receives from the French the names of *Bec d'Oie* (Goose-beak) and *Oie de Mer* (Goose of the Sea). It was very differently regarded and designated by the ancient Greeks; it was their *Hieros Ichthys* (sacred fish), was invested with many fabulous attributes, and was the subject of many mythological legends. It was supposed to be peculiarly friendly to men. It was sacred to Apollo, who was worshipped at Delphi with dolphins for his symbols. The figure of the D. (see accompanying illustration) appears on many ancient coins and medals; it is said to have been borne on the shield of Ulysses; it early appeared on the shield of some of the princes of France, and gave its name to one of the fairest of the French provinces, from which the heir-apparent of the French throne came to be styled the Dauphin. It is not easy to account for the high regard in which the D. was anciently held, nor to explain the general transference of its name in modern times to the coryphene, a very different creature, remarkable for those changes of color in its dying moments which poets have delighted to celebrate.

Dolphin.

Of the other species of D. one only occurs, and that but rarely, in the British seas, the Bottle-nosed D. (*D. Tursio*), which is said sometimes to attain a length of 24 ft. It appears to belong to the northern parts of the world.

Dolphins not unfrequently enter the mouths of rivers. A dolphin of the Arctic Ocean (*D. leucas*) ascends into the fresh water of the Obi, to prey upon the ascending fishes of various kinds.

DOL'PHIN, Black (*Aphis Fabæ*): species of *Aphis* (q.v.), or plant-louse, which infests the bean, and often does considerable injury to crops, sucking the juices of the plants and preventing the development of flower-buds. It is of a dull, black, or dark-green color, the young spotted with silvery white. The first that appear are wingless, but later winged individuals are produced, and the pest spreads with great rapidity. It is in the succulent tops of the plants that the aphides first appear, and a common practice of gardeners is to remove the tops in which they are observed.



Black Dolphin:
***a*, a colony; *b*, a winged insect, magnified; *c*, a wingless female,** magnified.

DOLT, n. *dōlt* [Swab. *dalde*, an awkward, clumsy person: Ger. *tölpel*, a blockhead: Icel. *dalpa*, to flounder in the mire: Scot. *doylt*, stupid, which see]: a heavy, stupid person; a blockhead. Dolt'ish, a. stupid; dull in intellect. Dolt'ishly, ad. *-lĭ*. Dolt'ishness, n. the quality of being stupid; stupidity. *Note.*—Skeat says, Dolt is a mere extension of OE. *dul* by the postfix *t;* prov. Eng. *dold*, stupid.

DOM, *dŏm*, or Don, *dŏn* [from Lat. *dominus*, lord]: title originally assumed by the popes, from whom it descended, in France at least, to bishops and other dignitaries, and finally to monks. In Portugal, the title *dom* is confined to the sovereign and his family. The Spanish *don* was originally confined to the nobility, but is now bestowed by courtesy as indiscriminately as the English *Mr.* or *gentleman*. The feminine *doña* is, in like manner, given to ladies: see Don.

DOMAIN, n. *dō-mān'* [F. *domaine*—from L. *domĭnĭŭm*, lordship, property—from *domĭnus*, a lord]: possession; estate; empire; dominion; the parks, etc., lying around the house of a lord, in which sense we also use *demain* and *demesne*. **Doma'nial**, a. *-mā'nĭ-ăl,* pertaining to. see **Demesne.**

DOMBEYA, n. *dŏm-bē'a* [named after M. J. *Dombey*, a French botanist]: genus of trees or shrubs belonging to the order *Byttneriaceæ*, natives of the East Indies, Madagascar, Bourbon, and the Isle of France. In Madagascar the bark of *D. spectabilis* is made into ropes. **Dombey'eæ**, n. *-ē-ē,* tribe of *Byttneriaceæ*, type *Dombeya*.

DOM-BOC, *dŏm'bŏk*, or **Doom-book**, *dôm'bûk* (book of dooms or sentences, *liber judicialis*): code of laws compiled by King Alfred, chiefly from the West-Saxon collection of his own ancestor Ina, but comprising also many portions of the Kentish collection of Ethelbert, with the supplements of his successors, and of the Mercian laws of Offa. 'Ina's collection,' says Dr. Pauli, 'was the only one received entire into the Codex, which was chiefly applicable to the condition of the West Saxons. A few articles were admitted here and there from the Kentish and Mercian laws, but research into this matter is not possible, as Offa's book is lost.' Alfred made few if any original laws, but contented himself with restoring, renovating, and improving those which he found in existence. The W. Saxon dialect had become a written language earlier than any of the Teutonic dialects of the continent; and as the power of the clergy in Saxon England was more limited than elsewhere, the laws of England, till the Norman Conquest, were administered in the vernacular speech of the people. Alfred's peculiarly Christian character is strongly impressed on his code, which begins with extracts from the Bible, 'The Lord spake all these words, saying, I am the Lord thy God.' Then follow the ten commandments, the part of the Mosaic law relating to criminal offenses, and passages from the New Testament, including the golden rule. Yet these extracts prove not the *ecclesiastical*, but only the *scriptural* character of the *Dom-boc*. The code was ratified by the Witan, as Alfred expressly informs us. In addition to Dr. Pauli's life of Alfred, in two English translations, see Thorpe's Introduction to Alfred's Laws, in the *Ancient Laws and Institutes of England*, I, 58.

DOMBROWSKI, *dŏm-brŏv'skē* (properly **Dabrowski**), **Jan Henryk**: 1755, Aug. 29—1818, June 6; b. at Piersowice, dist. of Cracow: distinguished Polish general. He entered the service of the Elector of Saxony 1770; but in 1792, on the first symptoms of the insurrection in Poland, went to Warsaw. He took part in the Polish campaigns against Russia and Prussia, and exhibited such remarkable military talent, that on the termination of hostilities, Suwarrow offered him employment in the Russian service, and Prussia made him a similar offer. Both were refused, and D. went to France, where, 1796, he was commissioned by the Directory to form a Polish Legion among his exiled countrymen, of which he was appointed commander. The legion brilliantly distinguished itself in the Italian campaign. While in Rome, the admirable discipline which D. preserved among his troops, raised him so high in the estimation of the senate, that it presented him with the standards which his great countryman Sobieski had taken from the Turks, when he compelled them to raise the siege of Vienna, and which he had sent to the church of San Loretto. In the campaign of 1799–1800, D. showed splendid courage. After the peace of Amiens, D. became a gen. of division in the service of the Cisalpine Republic; and after the battle of Jena, with Wybicki, he was ordered by Napoleon (1806) to summon his countrymen to arms. His entrance into Warsaw, at the head of 12 Polish divisions, resembled a classical 'triumph.' At Dirschau and Friedland, he won fresh laurels. In the fatal Russian campaign of 1812, he commanded one of the three divisions of the fifth *corps d'armée*, and at the passage of the Beresina, saved from destruction the relics of Poniatowski's corps. In 1813, at the head of his Poles, he took an honorable part in the battles of Teltow, Grossbeeren, Jüterbogk, and Leipic. After the fall of Napoleon, D. returned to Poland, and in 1815 was appointed by Emperor Alexander a gen. of cavalry and Polish senator; but in the following year he withdrew from public employment to his estate in the duchy of Posen.

DOME, n. *dōm* [L. *domus*, a house: Gr. *dōma*, a roof, a house: F. *dôme*, a dome—from It. *duomo:* Ger. *dom*, a cathedral—a church, being called the *domus Dĕī*, house of God]: the part of a roof in the form of an inverted cup or half globe; a house or building; a cupola; the upper part of a furnace when of a hollow circular shape. DOMED, a. *dōmd*, having a dome. DOME-SHAPED, in the form of a dome. DOMAL, a. *dō'măl*, relating to the astrological use of a house of the heavens,—the whole heaven, visible and invisible, having been divided by astrologers into 12 equal parts, called the 12 houses of the heavens.

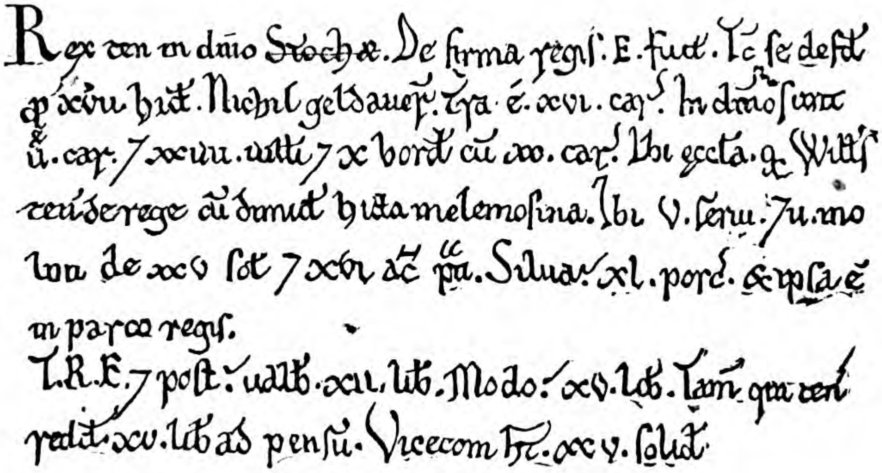
DOME (Ital. *duomo*): often used synonymously with Cupola (q.v.), but, in the stricter sense in the languages of northern Europe, the external part of the spherical or polygonal roof, of which the cupola (*cupo*, or cup) is the internal part. In Italian usage, however, it has a wider signification than even the first, being used to denote the cathedral or chief church of a town, *the house* (domus) *par excellence*, or house of God. The cause of the name of the building being thus applied to the form of the roof which covered it, arose from the fact, that the chief churches of Italy were at one period almost universally so roofed. In tracing the historical origin of the dome, it is usually regarded as originating with the architecture of the Eastern Empire, because it was at Constantinople and in the Byzantine provinces that it was first employed in ecclesiastical structures. But the Romans, in reality, were the inventors of the D., as of all the other applications of the semicircular arch. Of their success in applying it to large buildings, we have abundant proof in the ancient domes still seen in Rome and its neighborhood. The dome of the Pantheon is probably the most magnificent D. in existence, and others of smaller size are in the temples of Bacchus, Vesta, Romulus, Hercules, etc. 'From Rome it went to Constantinople, and from the same source, also, came the few insignificant attempts at domes in the Western Empire.' —Fergusson's *Handbook of Architecture*, ii. 943. The external form of the D. of the church of St. Sophia at Constantinople, which became the typical Christian structure of the kind, appears in the illustration appended to BYZANTINE ARCHITECTURE. See PANTHEON. The D. of San Vitale, at Ravenna (q.v.), is said to be still more ancient than that of San Sophia, and is a very remarkable structure of the same class. On the church of St. Marco, at Venice, there are no less than five domes, the centre one, as usual, much larger than the others. The interior of these domes is covered with Mosaic (q.v.). So far from being peculiar to the few churches mentioned, domes occur in the churches of almost every town along the w. shore of the Adriatic, and form, in fact, the chief architectural feature of this side of Italy. The construction of domes in modern times was revived in Rome, by the building of that of Our Lady of Loretto in 1507. But the three most celebrated modern domes are those of St. Peter's (q.v.) at Rome, of St. Paul's (q.v.) in London, and of the Pantheon (q.v.) in Paris. A very complete article on domes, condensed in the *Penny Cyclopædia* is in the *Encyclopédie Méthodique*, under 'Architecture.'

DOMENICHINO, *do-men-e-kē'no*, or DOMENICO, *do-mĕn'e-ko*, ZAMPIERI: 1581–1641; b. Bologna: celebrated painter of the Bolognese school. He began his studies under D. Calvaert, and completed them under the Caracci. During the whole of his career, D. suffered from the jealousy of rivals, who are not free from the suspicion of having caused his death by poison. His frescoes are distinguished by correctness of design, soft delicacy, and freshness of color; the heads of his figures, in particular, are remarkable for expressive force. The master-piece of D., the 'Communion of St. Jerome' (in the Vatican), though suggested by Ag. Caracci's, is a sublime production. The 'Life of the Blessed Virgin,' and the 'Cure of the Demoniac Boy,' are of exquisite beauty. Out of Italy, the Museum of the Louvre has the largest number of D.'s works.

DOMESDAY, n. *dōmz'dā*, or **Domes'day-book** [L. *Domus Dĕī*, the house of God, so called from the inclosure where kept—the second part of the word, viz., *day*, being a mere corruption of *Dĕī:* the origin from AS. *dom*, judgment, is less probable]: the anc. record of the survey of all the lands in the kingdom made in the reign of William I., and now in the Exchequer, consisting of two volumes, a greater and a less. The name is applied sometimes to a similar record recently completed; anciently it was a name for a register or cartulary of lands.—The popular etymology of Domesday-book, by the spelling *Doomsday-book*, connects it with *doom* or *dom*, judgment, and so from an AS. *dómes-dæg*, the day of judgment or decision, (1) because the great AS. proprietors were dispossessed of their ancestral lands by William I., who bestowed them on his Norman followers, (2) because it was a book from which *dooms* or decisions were given in all litigations about land. There were, however, *Domebooks* in England before William I. That of William the Conqueror, completed 1086, is one of the oldest and most valuable records of England. It was anciently known by several other names, such as the *Liber de Wintonia*, or book of Winchester; and the *Rotulus Wintoniæ*, or Roll of Winchester, because it was at one time preserved in the royal treasury in that city; the *Liber Regis*, or the King's Book; the *Scriptura Thesauri Regis*, or Record of the King's Treasury (where it was long kept, together with the king's seal, under three locks and keys); the *Liber Censualis Angliæ*, or Rate-book of England.

The way in which the survey was made will be best described in the words of the contemporary writer in the Anglo-Saxon Chronicle. After relating how, 1085, England was threatened with invasion from Denmark and Flanders, and how King William prepared for its defense by laying waste the sea-shores, and by raising the largest army that had ever been seen in the island, 'billeting the soldiers upon his subjects, every man according to the land which he possessed,' the annalist goes on to say that at midwinter, when the king was at Gloucester, 'he had a great consultation, and spoke very deeply with his witan [i.e., great council or parliament] concerning this land, how it was held, and what were its tenantry. He then sent his men all over England, into every shire, and caused them to ascertain how many hundred hydes of land it contained, and what lands the king had in it, what cattle there were in the several counties, and how much revenue he ought to get yearly from each. He also caused them to write down how much land belonged to his archbishops, to his bishops, his abbots, and his earls, and—that I may be brief—what property every inhabitant of all England possessed in land or in cattle, and how much money this was worth. So very straitly did he cause the survey to be made, that there was not a single hyde, nor a yardland of ground, nor —it is shameful to say what he thought no shame to do—was there an ox, or a cow, or a pig passed by, and that was not set down in the accounts, and then all these writings were brought to him.'

The survey was made by commissioners called the King's Justiciaries, who seem to have had the help of the chief men of every shire. By a sworn assize or jury of the sheriffs, lords of manors, presbyters of churches, reeves [i.e., grieves or overseers] of hundreds, bailiffs, and six villeins [i.e., tenants at will] of every village, they made inquest as to the name of the place; who held it in the time of King Edward (1041–66); who was its present possessor; how many hydes there were in the manor; how many plowgates in demesne [i.e., reserved in the lord's own hand]; how many homagers or vassals; how many villeins; how many cottars; how many serfs; what free-men; how many tenants in socage [i.e., tenants by hereditary right]; how much wood; how much meadow and pasture; what mills and fish-ponds; how much had been added or taken away; what was the gross value in King Edward's time; what was the present value; and how much each free-man or soc-man has or had. Of all this there was to be a threefold return or valuation: 1. As the land was held in King Edward's days; 2. As it had been given by King William; 3. As it stood at the time when the survey was made; and the jurors were to say further whether the value could now be raised.


Rex ten in dnio Stochæ. De firma regis. E. fuit. Tc se defd p xvii hid. Nichil geldauer. Tra e xvi car. In dnio sunt ii car. 7 xxiiii uitti 7 x bord cu xx car. Ibi eccta q Witts ten de rege cu dimid hida in elemosina. Ibi v serui 7 ii molin de xxv sol 7 xvi ac pti. Silua xl porc. 7 ipsa e in parco regis.
T.R.E. 7 post ualb xii lib. Modo xv lib. Tam qui ten reddit xv lib ad pensu. Vicecom ht xxv solid.

Specimen of Domesday Book:

The reading is as follows:

Rex tenet in Dominio Stochæ. De firma Regis Edwardi fuit. Tunc de defendebat pro 17 Hidis. Nichil geldaverunt. Terra est 16 Carucatæ. In Dominio sunt 2æ Carucatæ & 24 Villani and 10 Bordarij cum 20 Carucis. Ibi Eclesia quam Willelmus tenet de Rege cum dimidia Hida in Elemosina. Ibi 5 Servi & 2 Molini de 25 sol. & 16 Acræ Prati. Silva 40 Porcorum & ipsa est in parco Regis.

Tempore Regis Edwardi & post valebat 12 lib. Modo 15 lib. Tamen qui tenet reddit 15 lib. ad pensum. Vicecomes habet 25 solid.

The returns thus gathered in the several shires, and their hundreds and other subdivisions, were arranged and digested in the record now called the Great or Exchequer Domesday. The enumeration of the cattle and swine, which so moved the indignation of the Anglo-Saxon chronicler, was omitted from the record, doubtless because the live-stock was altering every month and year, so that an account of its numbers in any one year could not be of permanent importance; but that the enumeration was made, is proved by the records called Little Domesday and the Exon Domesday. These are believed to be transcripts of the original rolls or returns made by the Conqueror's commissioners for the counties of Essex, Norfolk, Suffolk, Wilts, Dorset, Somerset, Devon, and Cornwall; and they set forth the number of horses, oxen, sheep, goats, and pigs, together with some other details left out in the compilation of the great Domesday. The taxes were levied according to the divisions of the country given in the D. Book, until 1522, when a new survey, popularly called the *New D. Book*, was made.

The mere statement which has been made of its contents, is enough to show the immense value of Domesday Book for all purposes of inquiry into the ancient condition of England. 'It will ever,' says Dr. Lappenberg, 'be found an inexhaustible source of information respecting the Anglo-Saxon and Norman constitutions, particularly the rights and revenues of the kings and their vassals, the relations of cities and towns, statistic accounts of various kinds, families and their landed members, together with innumerable matters highly interesting to inquiring posterity, but unnoticed by the chroniclers of those times, either as too well known or as worthless. An intimate acquaintance with Domesday should supply the basis of every historical account of England, particularly of its special history during the middle age.' No other country of Europe can show such a work. It was fit, therefore, that it should have been the first great English record published at the national cost. It appeared in 1783 in two folios, being printed with types cast for the purpose, so as to represent the contractions of the original manuscript, and having been ten years in passing through the press. In 1816, two supplementary vols. were published, one containing an excellent general introduction, by Sir Henry Ellis of the British Museum, with indices of the names of places and of the tenants in chief mentioned in the work; the other containing four other records of the same nature: 1. The Exon Domesday, already mentioned; 2. The Inquisitio Eliensis, a record closely resembling the Exeter Domesday, containing the survey of the lands of the monastery of Ely, in the counties of Cambridge, Hertford, Essex, Norfolk, Suffolk, and Huntingdon; 3. The Winton Domesday, containing two surveys of the city of Winchester, one made between 1107 and 1128, the other in 1148; and, 4. The Boldon Book, a survey of the possessions of the see of Durham, made 1183. This last work is specially valuable, as partially supplying a deficiency in the survey for Domesday Book, which did not extend to the counties of Durham, Northumberland, Westmoreland, and Cumberland, either, it would seem, because they had been lately laid waste by the Conqueror, or because his dominion was not fully established in them. A new and better edition of the Boldon Book was issued 1852 by the Surtees Society, which, 1857, printed *Bishop Hatfield's Survey*, another record of the possessions of the see of Durham, compiled between 1345 and 1381. A new and enlarged edition of Sir Henry Ellis's *General Introduction to Domesday Book*, was published 1833, 2 vols. 8vo. See also Stubb's *Select Charters*, and Freeman's *Norman Conquest* (V., 1876). In 1861, a fac-simile copy of that part of Domesday Book which relates to Cornwall, was published by the Ordnance Survey, as an example of what could be done by the then new process of engraving called photozincography. This experiment proving successful, government has gone on publishing the rest of the Domesday Book, county by county, in the same way. In 1872 government ordered a general return of owners of lands, to be prepared by the local govt. board. This new 'Domesday Book' was published 1874–76.

DOMESTIC, a. *dŏ-mĕs'tĭk* [F. *domestique*—from L. *domesticus*, belonging to the house—from *domus*, a house: It. *domestico*]: pertaining to one's home or family; remaining much at home; private; tame; not wild; not foreign: N. a servant living in a family. **DOMES'TICALLY**, ad. *-lĭ*. **DOMES'TICATE**, v. *-tĭ-kāt*, to make at ease as if at home; to familiarize; to accustom to remain at home; to tame or reclaim from a wild state. **DOMES'TICATING**, imp. **DOMES'TICATED**, pp.: ADJ. fond of remaining at one's own home. **DOMES'TICA'TION**, n. *-kā'shŭn*, the taming of wild animals; the act of living much at home. **DOMESTICITY**, n. *dŏ'mĕs-tĭs'ĭ-tĭ* [F. *domesticité*]: domestic character. **DOMESTIC BOILER**, n. one for heating water on a somewhat large scale for the household. They form a permanent attachment to the stove.

DOMES'TIC AN'IMALS: those which, in order to turn them to his use, man has tamed or reduced in a greater or less measure from their natural wildness, and which he makes the objects of his care, and his property. Many animals are useful to man, which he has never thus appropriated. Such are the deer and other game which the hunter pursues, and fishes generally, whether of the sea, lake, or river. Man has not yet found it possible to domesticate them, or has not found it necessary or desirable to do so. Individuals, indeed, of some species have been domesticated, and become very tame, but these are exceptional. In general, those only are called domestic animals which have existed from one generation to another in a state of domestication. Of almost all of them, domesticated races exist, considerably different from any now found in a state of nature; the peculiar circumstances in which they are placed by domestication exercising a modifying influence, like that of cultivation in plants. Domestic animals belong mostly to the classes of mammals and birds. Of mammals, those domesticated are exclusively of the common quadruped form, and mostly herbivorous. The greatest number, and these among the most important, belong to the order of ruminants; some of them valuable for their flesh, their milk, their hair or wool, their hide, etc., or as beasts of burden and of draught, some on all these accounts. To this order belong the ox, buffalo, and yak, the sheep, the goat, the reindeer, the camel, and the llama and alpaca. Of other herbivorous quadrupeds, most important are the horse and ass, the elephant and the hog. Of the elephant, however, though for many ages it has been much employed for various purposes in India, no domesticated race exists; the individuals which man reduces to his service, being still taken as at first from among the wild denizens of the forest. Domesticated races exist of two comparatively unimportant quadrupeds of the order of rodents, the rabbit and the cavy or Guinea-pig.—Of carnivorous quadrupeds, there are only two generally and thoroughly domesticated, the dog and the cat. The uses to which these animals are applied are very different from those in order to which herbivorous quadrupeds are kept in a domestic state. Analogous to one of the uses of the dog is that to which the cheetah or hunting-leopard is applied by some of the princes of India, but like the elephant, it is only individually domesticated. The same remark may be made concerning some other animals—the otter, the civet, etc.—which in different countries are tamed or kept in confinement for certain purposes. The domestication of the ferret is rather more complete.—Of birds, the most important domestic species belong to the gallinaceous order, and to the family *Anatidæ* among web-footed birds. To the former belong the common domestic fowl, the turkey, the peacock, the Guinea-fowl, etc.; to the latter, the goose, duck, etc. Of other birds, none can be said to be truly domesticated, except, perhaps, one or two species of song-birds, particularly the canary. The birds used in falconry are domesticated only in the same sense as the cheetah; but it is worthy of note that man has been able to make both birds and beasts of prey his servants.—Reptiles are quite capable of being tamed, and in some countries some of them are occasionally kept in houses for killing flies, or even for killing mice and rats; but none of them can be enumerated among domestic animals. Nor, perhaps, can any species of fish, be so regarded, although artificial ponds have long been in use, and some species of fresh-water fish are to a certain extent the objects of care and of a kind of culture on the part of man.—In the lower divisions of the animal kingdom, only a few species ever receive such culture, or in their living state are claimed by man as his property. All these belong to the class of insects—viz., two or three species of bee, two or three species of silk-worm moth, and two or three species of cochineal insect. These may be more fitly described as *cultivated* than as *domesticated.*

Many animals not yet domesticated, might probably be added with advantage to the number of domestic animals. Adaptation to particular climates and situations might probably be found to recommend species allied to those in which great part of the wealth of mankind has long consisted, and from which still more of it has been derived. It is not impossible, also, that as the waste places of the world become peopled, animals already becoming scarce, may be advantageously domesticated on account of their fur or other products for which they are now pursued by the hunter.—The principal domestic animals, however, of the present day, have been domestic animals, and highly valued as such, from time immemorial. We have no record of the domestication of the ox, the horse, the camel, the dog, the cat, etc. Even the llama and alpaca, though known only to the inhabitants of the Andes and adjacent regions, were found in a state of domestication there when S. America was first visited by Europeans, and their subjection to man is probably to be referred to the earliest periods of Peruvian civilization. The limitation of some domestic animals to particular countries and climates—of which we have notable instances in the camel of the Asiatic deserts, the reindeer of the arctic regions, the yak of the steep and snow-clad Himalaya, the buffalo of tropical marches, and the S. American quadrupeds above mentioned —forbid us to suppose that all the important domestic animals were domesticated by the same people and at the same period, or that they have all spread in a state of domestication from a common centre or source. Yet there are many circumstances which point to the same Asiatic region as that in which the greater number of them were first domesticated, which is commonly regarded as the cradle of the arts and sciences, and even of the human race.

DOMES'TIC ARCH'ITECTURE: constructive art applied to dwellings. The external forms and internal arrangements of the domestic abodes of a people are far more influenced by their manners, habits, and occupations, and by the climate in which they live, than their ecclesiastical edifices and public buildings; and there is, consequently, no department of architecture so varied and national as domestic architecture. But not only are the circumstances of each country different in this respect; the same is the case with different departments of each country, with various towns in each department, with the streets in each town; and a domestic architecture which fulfils its object, will not only adapt itself to the necessities, but will make the best, in artistic effect, of the specialties of every case with which it is called to deal. The circumstances of families, and even the tastes and fancies of individuals, are legitimate subjects of consideration in domestic architecture. To attempt to give to domestic architecture the beauty of uniformity, is consequently to mistake both its object and the source of its charm. When attained at all, uniformity is attained usually not in accordance with, but in defiance of, the utilitarian objects of domestic architecture. The results of this artistic falsehood may be seen in the monotonous and meaningless streets and squares in many principal modern towns. The legitimate charm of domestic architecture, because the only one which can arise from the complete fulfilment of its object, is the charm of variety. It is the charm which our ancestors sought during the whole of the great architectural period of the middle ages, and which recent architects, who in this, as in so many other respects, are returning to their principles, are beginning to cultivate. Yet, in general, it is the principle alone that can be revived, and the details can be legitimately copied only in the exceptional cases in which circumstances and the objects to be attained remain unchanged. To construct for the citizen in the 19th c. a house in all respects resembling that constructed for one in the 14th would be an error the same in kind as to construct for either of them a model dwelling in Pompeii or Canton.

An account of the forms of English houses since the 12th c., will be found in Parker's *Glossary of Architecture.* Apart from our own earlier examples, the forms of domestic architecture most suggestive for present use in this country, are those which are found in such wonderful beauty and variety in almost all the older continental towns of the north of Europe. It was from the domestic architecture of France and the Netherlands that that of Scotland, at its best period, was mainly borrowed.

DOMETT, *dŏm'et*, or **Domets**, n. *dō-mĕtz'* [unascertained]: a loosely woven black or white material, resembling thin flannel, whose weft is of wool, and warp of cotton.

DOMICILE, n. *dŏm'ĭ-sĭl* [F. *domicile*—from L. *domĭcĭlĭŭm*, a habitation—from *domus*, a house: It. *domicilio*]: a house; a residence; the usual place of abode: V. to fix for one's self a permanent residence. **Dom'iciling**, imp. **Dom'iciled**, pp. *-sĭld.* **Dom'icil'iary**, a. *-sĭl'ĭ-ėr-ĭ*, pertaining to the residence of a family or person. **Domiciliary visit**, a visit paid to a house by authority to search for persons or things. **Dom'icil'iate**, v. *-sĭl'ĭ-āt*, to domicile; to make quite at ease as in one's own home. **Dom'icil'iating**, imp. **Dom'icil'iated**, pp. **Dom'icilia'tion**, n. *-ā'shŭn*, permanent residence.—Syn. of 'domicile, n.': abode; mansion; habitation; home.

DOM'ICILE, in Law: a man's place of abode which the law will hold to be his residence. In determining questions of D., so often surrounded by difficulties, the law endeavors to follow the facts of each case, and, consequently, the legal as well as the natural view of the matter is expressed in that definition of a D. in the English code which says, 'every man has his domicile where he has placed his hearth and centred his fortunes, whence he goes not forth without an occasion, from which, when he is absent, he is said to be abroad, and to which, when he returns, he is said to cease to be abroad.'—Cod. 10, tit. 40, s. 7. Even in Rome, questions of D. were important, for the empire was divided for purposes of domestic government, and the inhabitant of one province was not subject to the magistrates of another. But it was in modern times, when Europe was divided into many independent kingdoms, and America was formed out of states having different local customs and laws, that the law of D. assumed its full importance. It now constitutes one of the most difficult branches of private international law (q.v.). The following are its most general rules: 1. The place of birth is the original D. of every one, provided that, at the time of his birth, it was the D. of his parents; but if his parents were then on a visit or on a journey, the home of the parents will be the D. of birth, nativity, or origin (*domicilium originis*). 2. If the child is illegitimate, it follows the D. of its mother. 3. The D. originally obtained continues till a new one is acquired; unless lost by non-residence, under the provisions of a statute, as in the case with paupers in some countries. 4. Minors are generally deemed incapable of changing their D. of their own accord, but it may be changed by a change in the D. of the parents, or of the father, which it follows. 5. If the father dies, his last D. is that of his widow and children. 6. A wife takes the D. of her husband. 7. The place where a man lives, if there be no ground for entertaining an opposite presumption, is his D. 8. If a person of full age, having a right to change his D., takes up his abode in a new place, with the acknowledged intention of remaining permanently fixed there (*animo manendi*), that place immediately becomes, and that which he has quitted ceases to be, his D. The definite intention of remaining, or of returning, is requisite to establish a D. Temporary absence, however long continued, if there be definite intention to return, does not vacate a D. The law favors the presumption of a continuance of D. Questions as to what amounts to intention, or what circumstances constitute sufficient proof of intention of remaining, or quitting a place of residence, are among the most difficult in the law of D. Most persons who are resident abroad have a sort of floating notion that, in certain conceivable circumstances, they would return to their native country, and to these vague feelings they give expression in a manner more or less vague. Not enumerating other effects of the law of D., it may be stated generally, that it regulates the succession to personal or movable property, which is said to follow the person, and must be distributed after death according to the law of the country of which the deceased died a domiciled citizen. Heritable or real property descends in accordance with the law of the land in which it is situated (*lex rei sitæ*). A divorce valid under the law of the D. of both parties is valid everywhere: see DIVORCE: MARRIAGE.

DOMINANT, a. *dŏm'ĭ-nănt* [F. *dominant*—from L. *domĭnans* or *domĭnan'tem*, ruling or bearing sway—from *domĭnus*, a lord: It. *dominante*]: having the power or rule; possessing the ascendency; prevailing: N. in *music*, the note which is a fifth from the tonic—thus, if the key or tonic be C, the dominant is G. DOMINANT TENEMENT: see SERVITUDE.—DOM'INATE, v. *-nāt* [L. *domĭnātus*, having the power to rule over]: to prevail; to rule; to govern. DOM'INATING, imp. DOM'INATED, pp. DOM'INA'TION, n. *-nā'shŭn* [F.—L.]: arbitrary authority; tyranny; insolent rule. DOM'INATIVE, a. *-tĭv*, arbitrary; governing. DOMINATOR, n. *dŏm'ĭ-nā-tėr*, a predominant power or influence; an absolute governor. DOMINION, n. *dō-mĭn'yŭn* [mid. L. *dominĭōnem*]: supreme power or authority; territory or district governed by a prince; rule; control. DOM'INEER', v. *-nēr'* [F. *dominer*, to govern]: to tyrannize over; to rule over with insolence; to use authority oppressively. DOM'INEER'ING, imp.: ADJ. ruling over with insolence and tyranny;

using authority oppressively. **DOM'INEERED**, pp. *-nērd.*—SYN. of 'dominant, a.': governing; ruling; predominant; ascendant;—of 'dominion': country; region; tract; district; territory; government; authority; sovereignty; empire; predominance; preponderance.

DOM'INANT, in Music: the fifth above the tonic: the ruling or governing tone of the key. Ancient writers called the dominant the *quinta toni*, from its being the next in importance to the tonic. The dominant chord is always a major chord, the third being the *subsemitonium modi*, or leading note, which always rises a semitone to the tonic The dominant seventh is the major chord with the flat seventh above the dominant, and is the same in major and minor keys. The rules for the treatment of the dominant seventh, and for the chord of the ninth on the dominant, apply to all other chords of the seventh or ninth, which arise from the other degrees of the scale. The dominant seventh is a most important chord in modulation. The resolution of the dominant seventh is always into the chord of the tonic, when not interrupted. The dominant as a key is the nearest in relation to the tonic. Modulation into the key of the dominant is so frequent in composition, that its form may be said to be stereotyped. The subdominant, or under-dominant, stands next in importance to the dominant, and has its place on the fourth above the tonic, or, which is the same, on the fifth below. The chord of the subdominant is major or minor, according to the mode of the key. The chords on all other degrees of the scale, being either minor or diminished. give greater importance to the major chords of the tonic, dominant, and subdominant, in which chords all the notes of the scale are found, while the combination of these chords, giving the most perfect impression of a key, may account for their being of such importance in harmony.

DOMINGO, *dō-mēng'gō*, SAN or SANTO: maritime city of Hayti, cap. of a province of the same name, and of the republic of San Domingo or the Dominican Republic; on the s.e. coast, at the mouth of the Ozama, lat. 18° 29′ n., long. 69° 57′ w. It is the oldest settlement of European origin in America, having been founded, 1494. by Bartolommeo Columbus. The principal buildings are churches, (including a cathedral), convents, hospitals, colleges, barracks, an arsenal, and a light-house. The town is surrounded by a wall 8 ft. thick and 10 ft. high, built of *mamposteria*, a composition of earth, powdered stone, and lime. The streets are broad and intersecting at right angles. The chief trade is in timber and dye-woods. The name S. D. is sometimes applied to the whole island of Hayti. See HAYTI: DOMINICAN REPUBLIC. Pop. of city, abt. 15,000.

DOM'INIC, SAINT: see DOMINICAN.

DOMINICA, *dŏm-ė-nē'ka*, or DOMINIQUE, *dŏm-ė-nēk'*: British W. India Island, lat. 15° 18′ n , and long. 61° 24′ w.; about 290 sq. m.; pop. (1881) 28,211. It is of volcanic origin, hot and sulphureous springs still attesting the fact. It is the loftiest of the Lesser Antilles; attaining, at one point, an elevation of 5,314 ft., and nearly one-half of the surface consists of precipitous mountains and deep ravines. Where capable of cultivation, the soil is fertile; and, even on apparently inaccessible sites, the emancipated negroes have successfully established provision grounds. The principal productions are sugar, coffee, cocoa, cotton, lime juice, molasses, rum, tamarinds, sulphur, indigo rosewood, and other cabinet woods. The annual value of imports ranges from $280,000 to $325,000; that of exports, from $325,000 to above $500,000. The public debt is about $40.000. The cap. of the island is Roseau, or Charlotte ville, on the w. coast: it is the chief port; pop. 3,000. It is reported that 1,000 Caribs are still living secluded in the mountains of the interior. In 1880 there was a great (and rare) eruption of volcanic ash from the dormant crater of the Grand Souffriere Mountain. Since 1872 D. is a member of the Leeward Islands colony, and sends representatives to the general legislative council; but it has its own lieut. governor, its treasury, and its local legislature. Though the majority of the inhabitants are Rom. Catholics, the clergymen of the Church of England were till lately paid from the public funds. There is now religious equality. The abolition of slavery is admitted by all parties to have worked well in Dominica. In 1839, the planters at a public meeting acknowledged, 'with feelings of unmixed gratification, the peaceable and quiet disposition evinced by the laborers, as a body, since their entire emancipation;' and, in 1852, the lieut.governor officially adverted to the prosperity and contentment of the same class. It is even said that most of the 20 members of the assembly are men of color. The temperature, according to season and altitude, ranges from 88° F. down to chilliness; and even in the dry months, from Feb. to Aug., rain frequently falls. D. was discovered by Columbus, on his second voyage, 1493, on a Sunday (whence its name Dominica, i.e., the Lord's Day). It was then thinly inhabited by Caribs. In the 17th c., and part of the 18th, it may be described as a neutral island; but in 1759 it was captured by England, and in 1763 ceded by France. Again it was French, 1802–14; since then it has been English.

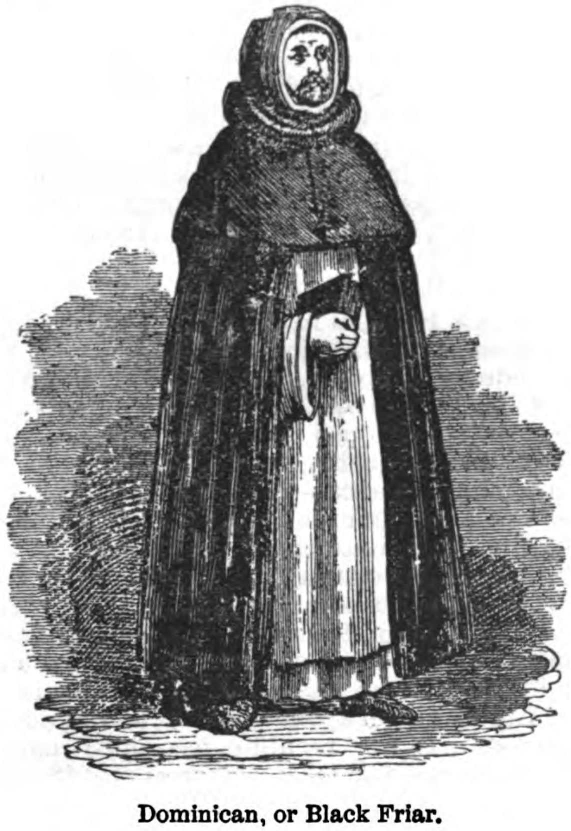
DOMINICAL, a. *dŏ-mĭn'ĭ-kăl* [F. *dominical*—from L. *dominĭcālĭs*—from *domĭnus*, master, lord]: that notes or marks the Lord's Day. DOMINICAL LETTER, or SUNDAY LETTER, in *almanacs*, the letter which denotes the Lord's Day, the first seven of the alphabet being used for that purpose. The first seven days of the year being marked in their order by the seven letters, A, B, C, D, E, F, G, in their order, then the following seven days, and all consecutive sets of seven days to the end of the year, are similarly marked; so that the 1st, 8th, 15th, 22d, etc., days of the year all are marked by A; and the 2d, 9th, 16th, 23d, etc., by B; and so on. The days being thus marked, it is evident that on whatever day the first Sunday of the year falls, the letter which marks it will mark all the other Sundays in the year, as the number of the letters and of the days in the week is the same.

DOMINICAL.

As the usual year consists of 52 weeks and one day over, the dominical letters go backward one day in every such year. If the dominical letter of a common year be G, F will be the dominical letter for the next year. As a leap-year consists of 52 weeks and two days, the letters go backward two days every leap-year. If in the beginning of a leap-year the dominical letter be G, E will be the dominical letter for the next year. This special retrocession, however, is made to take place at the intercalary day (Feb. 29) by the artifice of marking it by the same letter as the day preceding it, and thus the next Sunday is marked by the letter preceding that which marked the Sundays before the intercalary day. Suppose Feb. 28 in a leap-year to be a Sunday, and marked by F, it is evident that the dominical letter for the rest of the year will be E. As every fourth year is a leap-year, and the letters are seven in number, the same order of letters must return in four times seven, or 28 years, which would, but for the leap-years, recur in seven years; hence the Solar Cycle (see PERIOD). The dominical letters were first introduced into the calendar by the early Christians, to displace the nundinal letters in the Roman calendar. They are of use as a means of discovering on what day of the week any day of the month falls in a given year: see EASTER. Rules and tables for finding them are given in prayer-books, breviaries, etc., as well as in works on dates: see DATE.

DOMINICAN, n. *dō-mĭn'ĭ-kăn:* one of a religious order of preaching friars in the Rom. Cath. Church (*Fratres prædicatores*), founded at Toulouse 1215 by Dominic (Domingo) de Guzman, St. Dominic (1170–1221) was born at Calahorra, in Old Castile, studied theology at Palencia, and 1199 became canon and archdeacon of Osma in Castile. In 1205, with his superior, Diego de Azebes, Bp. of Osma, he began to itinerate through the south of France, for the purpose of converting the 'heretical' Albigenses; and convinced that the ignorance of the people and the worldliness of the clergy were great helps to the progress of heresy, he instituted the order which bears his name, for the express purpose of preaching and the cure of souls. Dominic, however, found it impossible to convert the Albigenses by this method, and therefore had recourse to another. In 1208, at the instigation of Dominic, the pope proclaimed a crusade against these 'heretics;' the barons of France were summoned to take part in it, and headed by De Montfort, committed horrible slaughter on these unfortunate people.

The order of the Dominicans was confirmed by Innocent III. and Honorius III. 1216. The members followed the rule of St. Augustine, somewhat modified; their dress was a white garment, resembling that of the Carthusians, with a black cloak and pointed cap of the same color. In 1220 they took the vow of poverty. Dominic died at Bologna 1221, and was canonized by Gregory IX. 1233. He is said to have been ordinarily not a cruel or unfeeling man, but his religious passions were so vehement, that they entirely dried up the milk of human kindness in his heart, and his conduct toward heretics was merciless in the extreme. As early as 1206, he founded an order of Dominican nuns, which, after 1218, when the first convent was established at Rome, spread far and wide. These nuns followed the same rule as the friars, and were solemnly pledged to habits of industry. A *third* Dominican order (the Knights of Christ) was established 1224, and confirmed 1279. It was originally a company of knights and nobles who had leagued themselves together for the suppression of 'heresy' by force of arms, but after the death of its founder, the order was changed into that of the *Penitents of St Dominic.* The members of this branch of the Dominicans were called also the Tertiary Dominicans. They were not bound by any vows, but their special duties were to observe particular fasts and devotions, and to execute great ecclesiastical judgments. They retained all their civic and domestic privileges. There were also *female* Penitents of St. Dominic, a few of whom, however, betook themselves to a conventual life, and became nuns. These few were chiefly in Italy; the most famous was St. Catharine of Siena. The glory of apostolic poverty, which encircled the Dominicans, the privileges which they possessed —especially of preaching and hearing confession—and the circumstance that as early as 1230, only 15 years after the foundation of their order, they secured a chair of theology in the great Univ. of Paris, all helped to rapid increase of their numbers and influence. Within *six* years after their establishment, they had spread to England through one Gilbert du Fresney, and founded a monastery at Oxford. 'The monks,' writes the contemporary annalist, Matthew Paris, himself a Benedictine, 'did not, in three or four hundred years, ascend to such a height of greatness as the friars, minors, and preachers, within twenty-four years after they began to build their first house in England.' Their progress was scarcely less rapid in Scotland, where they found a munificent patron in King Alexander, II., who is said to have met St. Dominic at Paris about 1217. In Britain, the Dominicans were called the *Black Friars*. In France, they received the name of Jacobins, from the Rue St. Jacques (Lat. *Jacobus*) in Paris where first they established themselves. Their monasteries arose throughout Christendom, and even on the shores of Asia, Africa, and subsequently America. Their monarchical constitution, which bound all the branches and congregations of the order under one grand head (*magister ordinis*), insured their progress and the cooperation of their efforts to secure influence in church and state. Through their preaching and proselytizing, it is undeniable that they exercised, at the time of the foundation of their order, and for a considerable time afterward, an influence alike

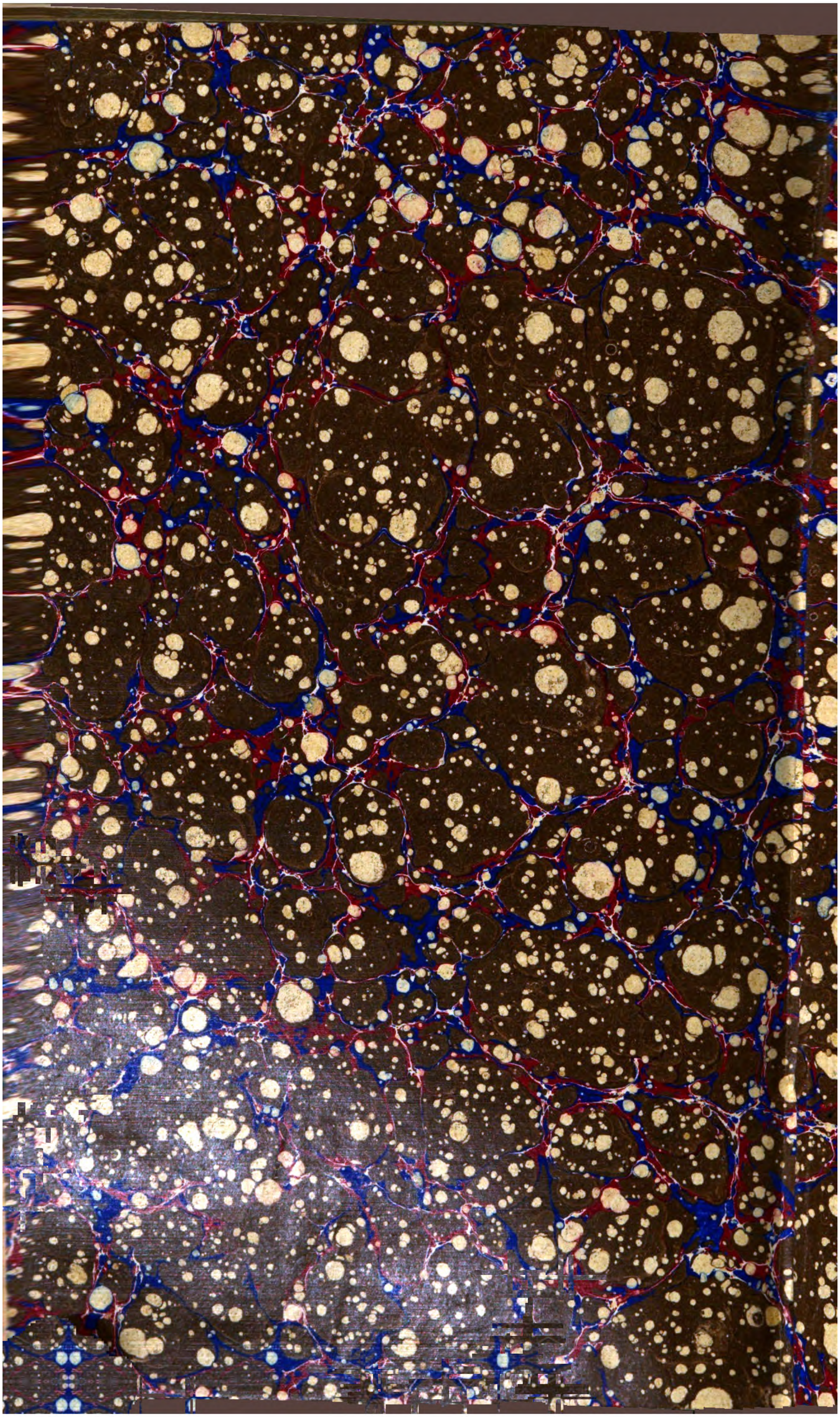


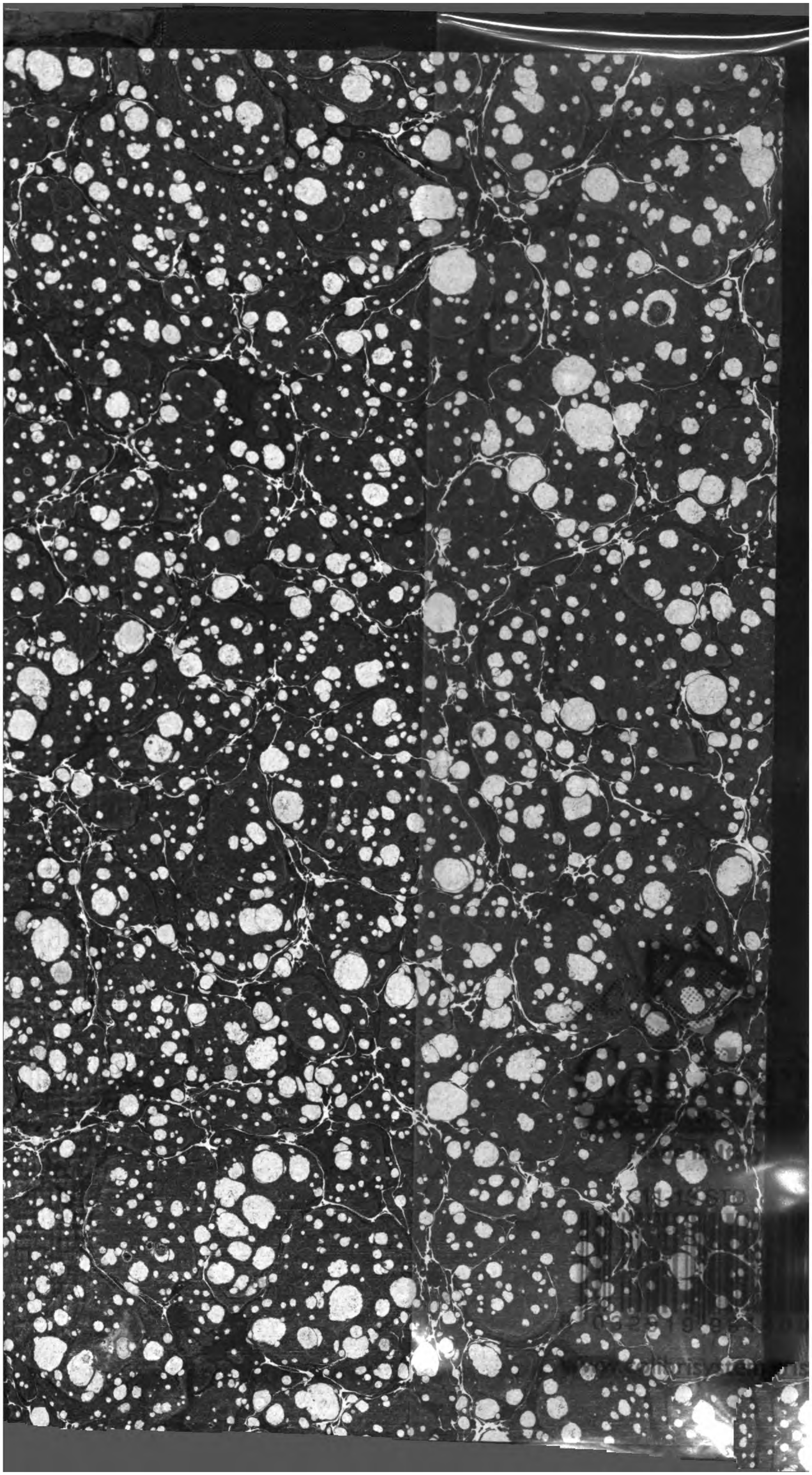
Dominican, or Black Friar.

extensive and beneficial. They have produced several great scholars and men of genius, such as Albertus Magnus; Thomas Aquinas, the normal theologian of the Rom. Cath. Church; and Raymund de Pennaforte. They have, however, a black reputation in history in connection with the Inquisition (q.v.), in which they were the chief agents. After 1425, when they obtained permission to accept endowments, they in some measure refrained from begging, and engaged themselves more with politics and theology. Their great rivals were the *Franciscans* (q.v.), and the mutual animosity of the two orders was strongly exhibited in the disputes of the Thomists and Scotists. These two orders divided between them the honor of controlling the church, and often the Rom. Cath. states of Christendom, until the rise of the Jesuits in the 16th c., who gradually drove both from the schools and the court, when the Dominicans were compelled to return to their original vocation. Their power was, however, again revived to a certain extent in 1620, when the censorship of books was conferred on the Master of the Vatican at Rome, who must always be a Dominican. In the 18th c., the order of Dominicans possessed 1,000 monasteries and convents, divided into 45 provinces, besides 12 separate congregations or sects. At present, the order flourishes only in Italy, France, Hungary, Switzerland, and America. The Dominican nuns, who are not numerous, have convents in Italy, France, Beligum, Hungary, Bavaria, and America.

DOMINICAN REPUB'LIC, *dō-mĭn'ĭ-kan:* state formed of the Spanish or east section of Hayti (q.v.). Spain, in 1697, surrendered to France, by the treaty of Ryswick, the w. part of the island, retaining the remainder till 1795. In the year last mentioned, however, the Spanish portion became nominally French. In 1814—the west having vindicated its independence—France formally relinquished, in favor of Spain, all claim to the east. In 1822, the colony, in imitation of the continental possessions, threw off the yoke of the mother-country, to link itself, more or less closely, with the neighboring state populated by Africans. But, in or about 1843, it assumed a separate standing as the Dominican Republic, the anarchy of which it exchanged in 1861 for the despotism of its former Spanish masters. But in 1863 it again revolted, and Spain gave up the possession, and the republic has since maintained a troubled existence. The D. R. has an area of 18,000 sq. m., nearly two-thirds of the area of the whole island. Its principal productions are sugar, tobacco, and coffee. Pop., chiefly negroes and mulattoes, estimated 400,000. The capital is San Domingo: see DOMINGO, SAN. See also HAYTI.

DOMINIE, n. *dŏm'ĭ-nĭ* [L. *domĭnus*, lord, master]: in *Scot.*, a schoolmaster; a pedagogue. A colloquial application of the term, frequent in N. Y. and adjacent parts of N. J., is to a clergyman.





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